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University News

MONDAY, FEBRUARY 26, 1990 Rs. 2.50

Training Programme for University Administrators

n L to R :

. S. Neelamegham (Faculty of Manage-t Studies, University of Delhi), . Rais Ahmed (Former Vice-Chairman, C) and Prof. S.K. Agrawala (Secretary,).

Mr. M.S. Ramamurthy (Joint Secretary, A with Dr. G.D. Sharma (Senior Fellow NIEPA) and Prof. Neelamegham.

CLASSIFIED ADVERTISEMENTS

UTKAL UNIVERSITY
VANI VIHAR
BHUBANESWAR-751004

No. Estt. I/1041-C/Vol. V/4450/90
Dated : 14-2-90

Applications in Seven copies are invited in the prescribed format given below alongwith attested copies of certificates and marklists of all examinations passed for the following posts of the University alongwith a bank draft of Rs. 50/- (Rupees fifty only) payable to the Comptroller of Finance, Utkal University at S.B.I., Utkal University Campus Branch. so as to reach the Registrar, Utkal University, Vani Vihar, Bhubaneswar-751004 by Registered post on or before the **12th March, 1990**, superscribed thereon with the words "Application for teaching posts under Utkal University".

Application Form for Teaching Posts
Advertisement No. Date

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8. (a) Research experience (be recorded in a separate page) :
   (b) Teaching experience (pass, Honours, P.G. Level teaching experience to be shown separately with certificates of teaching experience from appropriate levels) i
9. Specialization :
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Note : Copies of all documents must be self-attested.

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(Name of Departments; number of posts in brackets; specialization and reservation, if any, given below in this order).

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1. Deptt. Physics (One), Mayurbhanj Professor; 2. Deptt. Oriya (One) Ancient and Mediaval Oriya religious literature; 3. Deptt. Anthropology (Two), One is a D.S.A. post having specialization in Anthropology of regional development with special reference to Orissa; 4. Deptt. Philosophy (Two), One is a lien vacancy and the other is a D.S.A. post having specialisation in Philosophical analysis of value; 5. Deptt. M B.A. (Two). Both with specialisation in Financial Management/General Management/Production Management/Marketing Management/ Small Industry Management/Personnel Management; 6. Deptt. Chemistry (One); 7. Deptt. Geography (One); 8. English Language Teaching Centre (One) Linguistics; 9. Deptt. Analytical and Applied Economics (One).

READERS

1. Deptt. Oriya (One); 2. Deptt. M.B.A. (One) with specialization in Institutional Finance / Mathematical Finance/Marketing Management/Labour Legislation, Industrial Relation and Human Resources Development/ Organisational Psychology/Communication/MIS and Computer Science.

LECTURERS

1. Deptt. Anthropology (Two), Both are D.S.A. posts having specialisation in Anthropology of Regional Development with special reference to Orissa and one post is reserved for S.T.; 2. Deptt. Philosophy (One), D.S.A. post, Traditional scholar having Master's degree in Sanskrit with command of Pali Language or Acharya degree in Darshana with specialisation in Buddhism and Vedanta and reserved for S.T.; 3. Directorate of Correspondence Courses (Two), One Lecturer in Oriya and One Lecturer in Political Science; 4. Constituent Law Colleges (Three whole-time) one is reserved for S.T. and another is reserved for S.C.; 5. Deptt. Commerce (One); 6. Deptt. Labour Welfare (One), Post reserved for S.T ; 7. Dptt. Statistics (Two), One is reserved for S.T.; 8. Deptt. Psychology (Three) all leave vacancy posts.

Note :

1. Persons who have already applied for the post in response to the Advertisement No. Estt. I/886-C/Vol. IV/21524/89 dated 10-11-89 need not apply again.

However, the following changes may be noted. The minimum qualifications for appointment to the posts of Lecturer shall be Master's degree in the relevant subject with atleast 55% marks or its equivalent grade and good academic record as prescribed by U.G.C. Candidates having Ph.D / M.Phil. degrees or qualified in the eligibility test, conducted by U.G.C./ C.S.I.R , for JRF/Lecturerships are only eligible to apply for the posts of lecturer.

2. The details regarding scales of pay and other allowances, age of superannuation, as well as minimum educational qualifications for the posts and other conditions can be had from the University Counter.

3. The interviews for the following posts have been fixed as follows. The eligible candidates are required to attend the interview on these dates and time and no other intimation will be issued to them.

19th March, 1990 at 11 a.m,
Professor, Chemistry.
21st March, 1990 at 11 a.m.
Professor, Oriya.
22nd March, 1990 at 11 a.m.
Professor, Linguistics.
23rd March, 1990 at 11 00 a.m.
Professor, Anthropology
(D.S.A. Post)
26th March, 1990 at 11 a.m.
All M B.A. Professor posts.
27th March, 1990 at 11.00 a.m.
Professor of Philosophy.
(D.S A.)

D. K. Ray
REGISTRAR

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Editor :
SUTINDER SINGH

DEVELOPMENT AND ADVANCEMENT OF WOMEN IN MANAGEMENT

Mrs. J.K. Pillai*

The Setting

Although significant gains have been made in the last 15 years in increasing the number of women in entry level management positions, many women in junior positions still find that '*invisible ceilings*' exist in their advancement into senior management positions. In the USA, while 15% of women currently work as managers, only 1% occupy senior positions.

Baroness Lockwood, the immediate past Chairman of Equal Opportunities Commission of U.K., in her foreword to the book '*Women in Management*' (1984) by Cary L. Cooper and Maretyn says 'Yet now, in the early 1980s, the fact is that women at the top are still noticeable by their scarcity: the 1982 "New Earnings Survey" shows that women were just below 1 in 40 of top earners—which is very marginal improvement on the 1968 figures showing that women were just over 1 in 50 of the top earners, and in managerial positions as a whole, women are still a small minority with only approximately 9% of managers being women'. She asks, what has happened to all those women who set out on the right road during the last decade ?

In our country, according to the report of the All India Management Association (AIMA) :

(1) In the national recruitment scene, out of an over all 10% increase only 2% are women. They provide for only 12% of the total work force with continual dropouts, women executives are a miniscule proportion.

(2) In the Government service, the proportion of women is only 6% in all civil services, 7.5% in the IAS and 10% in the foreign service. In the Indian Police Service, women's employment has increased from one in 1972 to 21 at present.

(3) According to the '*Profile of Women in Tamil Nadu*' (1985), in judicial service, at the level of judges, sub-judges and magistrates, for every 40 men, there is just one woman.

(4) In the Legislative Assembly the ratio of women : men is 1 : 18.

(5) According to a report of the Association of Indian Universities (AIU) New Delhi, (1987), among the university teachers, there is one female teacher for every 10 male teachers, in the research institutions, the ratio is 1 : 9, in colleges of general education, the ratio is 1 : 4, in colleges of professional education, the ratio is 1 : 6. Among professors in the universities, women constitute hardly 2%. There are about 10 women Vice-Chancellors out of a total of 179 Vice-Chancellors of universities and deemed universities. (4 in Tamilnadu, 2 in Maharashtra, 1 in Andhra Pradesh, 1 in Madhya Pradesh, 1 in Bihar, and 1 in Uttar Pradesh).

Barriers to Women's Advancement into Senior Positions

There have been quite a few researches on this in USA, UK, Australia and in India.

**Vice-Chancellor, Mother Teresa Women's University, Kodaikanal-624 102.*

Bette Woody (1985) in her project '*Examples of Success*' examined policy and programme measures which have been proved most effective for advancing women into executive level decision making positions in the USA and she reports that an influence can be exerted by corporate settings on women's mobility to the top.

Studies on 'Why don't as many women as men go for promotion ?' by the South Australian Institute of Teachers (1980) have identified the following reasons :

(1) Many women see promotion as 'beyond them' because of poor self image, low self esteem, females are conditioned to be dependent, non assertive and non leaders. Margaret Mead says 'In Western Society, men are unsexed by failure, women, by success'.

(2) There is a sense of guilt to deal with the implication, that, to succeed, you must be causing harm to your real responsibilities—children, husband and home.

(3) Women are not experienced in the 'Politics of the Job'; they do not tend to forward for career advancement.

(4) Men take their career seriously, as they are considered to be the bread winners; women's earnings are seen as extra.

(5) Broken services due to child bearing and child rearing affect promotion opportunities.

(6) Women do not opt for transfer because of domestic responsibilities.

(7) There are very few role models to offer support.

(8) Male hierarchy tends to pass on promotion through the male line.

(9) There is hidden discrimination against women.

A large scale study by Cooper and Davidson (1982) in U.K. reports that female managers are subjected to a greater number of pressures as compared to male executives. That the pressures stem from stresses in the work, home, social and individual areas and there are more manifestations of psychosomatic symptoms and poorer work performances by women compared to men managers. They add that a majority of additional pressures at work experienced by female managers are stresses beyond their control and based largely on prejudice and discrimination from both organisational/corporate policy and other people at work.

Geeta Chaturvedi (1985) in her study, on women administrators of India, concludes that women lag behind that of men with similar initial performance and the barrier to women's advancement are the conflicts between family responsibilities and career commitments, systematic gender inequality and the hidden processes.

Medha Dubashi Vinze (1987) studying the Women Entrepreneurs of India, reports that women lacked confidence to study their own ventures; Social pressure restricting freedom of movement, society's lack of confidence in women and financial organisations not encouraging the women entrepreneurs are the reasons for women's unwillingness to come forward to take up entrepreneurship.

M.J. Louis (1988) in her study on 'Women Executives of Tamil Nadu', interviewed Bank Executives, Doctors, Engineers, Business Women and Educational Administrators and their problems are identified as societal pressures, familial pressures and professional pressures. Guilt feeling of neglecting household responsibilities, tension and conflict with family members. fear of society, fear of transfer, lack of support services, lack of opportunities for training, lack of continuing educational facilities for professional growth and upgradation of skills have been identified as factors contributing to the pressures.

Majorie Lyles (1983) groups the barriers that stand in the way of effective development of women managers as arising from three primary areas, namely, socialisation process, lack of political awareness and tokenism.

Socialisation

Sex role stereotyping, male-female interaction pattern in the work place and the societal norms interact with each other and enhance each other. Women are supposed to stay at home and raise the children, women are better at nurturing, women are soft, loving, attending and intuitive are accepted stereotypes and hence they are perceived as being afraid of achievement, poor at qualitative analysis and unable to make tough decisions. They are also perceived as being emotional, irrational and non-objective. Though these stereotypes are false, they subtly influence decision making about women in the work place.

Lack of Political Awareness

The political system or network is already established in the organisation and without access t information about the implicit norms, power coalitions and acceptable strategies, accomplishment of the goals may not be possible. Women lose sight of the fact that it is not enough to be good at your job, but you must also be effective in terms of learning to operate within the organisation's informal power structure.

okenism

Only a few women make it to the senior positions and they are usually placed in the position of representing womankind and thus they become a token. Being a token creates a pressure on the individual woman—pressure to excel and pressure of isolation. Token women can also make male groups draw close together, making it uncomfortable for the woman.

Ielping Strategies

The question is how to move women along, out f tracks, out of dead-end positions, and into senior nanagement. Search procedures should be changed, ommunication networks established and professional levelopment programmes implemented.

(1) The number of women in administrative ositions can increase only when people in authority nake affirmative action, an institutional imperative. he governing boards must make the advancement of vomen a publicly stated personal and institutional ommitment. Positive recruitment strategies, change organisational procedures to remove the hurdles nd obstacles which divert or block the progress, bjective appraisal, a machinery for sharing informaion, establishing social contact which builds on netvorking, opportunities for developing interpersonal kills such as confidence, working in groups, networkng, trust, openness and assertiveness, training in vomen's issues such as women's rights, accuracy of tereotypes, statistics about women and their contribuion to economy, provision of role models, providing mentor, training in new technology, retraining chemes, maternity and paternity leave, day nursery acilities, flexible working arrangements such as lexi-time, flex-place, etc. would be some of the meaures the organisation can introduce for assisting vomen in their advancement into upper management ositions.

(2) Women themselves must make a commitment o their own advancement. They must have the appropriate credentials, understand the organisational structures and political processes of the institution.

They should develop their own networks—organisation based, personal as well as professional.

To facilitate learning the rules of the game, they should have inner circle support by way of a mentor, man or woman.

Women also need to learn to cope with stress, combine and organise family responsibilities with office work effectively, to relax as well as be efficient. A good manager has to win friend and influence people. It is not enough to do a good job but a woman has to outperform others, make her successes known, try and act as someone with management potential, convey such attributes as smartness, positive and confidential manner, achieve credibility as efficient. reliable, sensible and practical, develop resilience to criticism, and be willing to take risks.

Despite difficulties, such as lack of support from the family, society and the government, and moments of self doubt, women must continue to strive to reach positions of influence and power, so that their capabilities and intelligence are used to the full.

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TO OUR READERS

Knowledgeable and perceptive as they are, our contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

REFORMING UNIVERSITY BUDGETING

Sanjay Shankar Kaptan*

Introduction

A look at the current educational system in the country would show that Zero Base Budgeting is an ideal approach to implement the new National Policy on Education (NPE 1986). Para 18 of the NPE has diagnosed the cause of non-implementation of 1968 educational policy resolution as its failure to get translated into a detailed strategy of implementation accompanied by the assignment of specific responsibilities and financial and organizational support. As a result the problems of quality, quantity, utility and financial outlay accumulated over the years have now assumed such massive proportions that they must be tackled with utmost urgency.

In the report of committee on the finances of non-agricultural universities in the State of Maharashtra, it is said that the deteriorating financial position of the universities is a matter of growing concern. It is necessary to bring a certain amount of financial discipline in working of the universities including curtailment of financial powers delegated at present at different levels and appointment of financial advisors.

The report suggests other measures required to be taken by the uniyersities to manage and plan their expenditure henceforward realistically to enable them to stand on their own legs i.e. without relying on Government or Semi-Government bodies like University Grants Commission (UGC) for grants beyond their approved financial pattern. While doing this, any scope for making further realistic assessment of non-teaching staff component may be indicated, having regard to the possibility of :

1. Ways and means of raising resources;
2. Effecting economies in the university administration; and
3. Restricting unnecessary and avoidable items of expenditure and excluding wasteful and/or extravagant commitments, if any, made by the university.

The comments make it clear that the existing budgeting and accounting procedures need to be overhauled and should be supported with realistic planning and budgeting process. The present approach in budgeting is based an incrementalism involving a percentage addition to the previous year's budgeted expenditure. This traditional approach has a number of limitations considering the changing pattern of finance and funds supply.

The Existing Budget Procedure

The existing position of university finances is certainly not healthy. Most of the universities are facing acute financial crisis. This deteriorating financial position of universities is a matter of concern to State & Central Government too. In a meeting of Vice-Chancellors in Feb. 1981, following two issues were given utmost importance :

1. Stabilizing their financial position through long-term and short-term measures; and

2. Exercising effective controls over their expenditure having regard to the resources at their disposal through suitable economy and measures.

The present budgeting system in the universities is not tuned to fulfil the above mentioned two objectives due to the following limitations :

(1) *Rigid Procedures :* The existing budget code, financial and accounting procedures are very rigid to adopt to the new changes due to their inherent limitations;

(2) *Mere Estimates* : The existing budgeting system concentrates more on mere estimating the probable revenues and payments by using historical data;

(3) *Want of Authority* : Justification of expenditure is not a responsibility of budget authority i.e. justification has to be made by th authority making budget request. This makes budgeting process more complicated due to lack of authority.

(4) *Increasing Deficits* : The deficits of the universities are growing alarmingly. They are not kept within limits of their own cas balances. Many times, unjustified expan sions, rising prices, escalation in costs ongoing projects aggravate the situation an smash the whole budgeting procedure.

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*Reader, Department of Business Administration and Management, Amravati University, Amravati.

(5) *Complex Organizational Set Up* : In the existing set-up of university administration, the external and internal factors interact in a very complex manner. This makes the decision making process and financial administration very much complicated. This has limited the scope of existing budgetary technique as the executive council and elected bodies give more stress on the current or day to day requirements and immediate future than the long term goals. Naturally it leads to shift the burden of overdraft and financial problem to the tenure of subsequent elected bodies and the process continues. This process may result in creation of financial problems in the long run. It is necessary to have long-term and short-term academic planning in each university.

(6) *Want of Control Mechanism* : The present budgetary exercise is not linked properly with planning, control and coordination functions of university administration. It is more or less a financial exercise worked in isolation to meet the two ends of payments and revenues. In the report of Dubey Committee, it is clearly stated that "The concept of control mechanism in university is a kingpin on which the long-term viability and development of university education depends". A systematic process needs to be introduced in the university budget making by a permanent cell which would carry out periodical appraisal on certain definite indices.

(7) *Raising Revenues* : The existing budgetary process has not paid much attention to raising sources of revenues and income. They have neither applied any technique to estimate probable rise in expenditure side and the probable way to meet out this 'gap'.

(8) *Want of Futuristic Approach* : Want of a futuristic approach and lack of application of forecasting technique has also affected the financial administration. The university finance section is yet to adopt the technique of inflation accounting, changes in capital and revenue demands due to change in rupee value.

(9) *Practical Limitations* : There are certain practical limitations of existing budget procedures, such as lack of proper coordination, want of qualification of data, and uneven growth of various administrative and teaching departments. This has created an imbalance in sources of funds and their applications and further created a budget gap.

(10) *Unsystematic Manpower Planning* : Lack of human resources planning has increased expenditure on staffing significantly; overstaffing and unplanned expenditure by way of improper job allocation, duplication of activities, lack of proper supervision, excessive overtime. Increase in irregular and casual workers are other reasons of failure of budgeting process.

(11) *Lack of Budget Education and Training* : The existing machinery and manpower employed in the process of preparation of budget lacks a systematic and careful knowledge of budget mechanism. A condensed but exhaustive training imparting knowhow of budget procedures and its application will certainly improve the performance.

The limitations mentioned above make it very clear that the present system of budgeting needs to be overhauled in order to improve financial position of the universities. As such, mere estimation of revenues and payments and maintenance of accounts should not be the sole function of the finance section, it should also standardise the budgeting system which will help in proper allocation of its scarce resources, generation of additional revenues and curtailment of wasteful and unnecessary expenses. Further, it will coordinate the planning and control activities so that budgeting will become a continuous activity to eliminate outlived functions and to give more attention to high priority activities.

From this point of view, we need a budgeting system which will coordinate planning. budgeting and control activities. Zero Base Budgeting is a technique which emphasises on this very principle.

Zero Base Budgeting

The Zero Base Budgeting technique is useful to improve the performance of the non-profit organizations; it emphasizes more and more on result orientation, using optimum resources and justification of each and every rupee to be spent on any new, or existing activity. Under the Zero Base approach, the budgeting procedure never presumes a percentage increment over previous year. The budget request of current year can be less than the budgeted amount for the previous years or even more. e.g. Maharashtra Government requested all its departments to prepare their 1987-88 budget assuming that only 80% of 1986-87 budget amount would be available for 1987-88. The Union Government in its circular dated July 10, 1986, laid down that budget making exercise under Zero Base Budgeting involved the following :

1. Identification of organization structures, management decision units, and defects;
2. Formulation and development of decision units;
3. Review and ranking priorities of decision packages; and
4. Allocation of resources for the chosen packages i.e. preparation of budget.

Thus, Zero Base Budgeting will involve managers (who have discretion over direction) at all levels in the budget and all operational process. In the notes issued by Government of Maharashtra written by James W. Pattilons; it is noted that Zero Base Budgeting is a system requiring close examination of a manager's functions and activities. The system requires managers to manage. They must analyse objectives and state the best activities to be engaged in to meet those objectives. They must identify measures of performance and then report the evaluations of performance to superiors.

Thus, right from the heads of the teaching department of universities, principals of affiliated colleges and persons incharge of administration section, to top authorities of universities, i.e. all levels of management, will be involved in the budget making and operational process. Justification of resources needed for different levels of existing and new activities will be provided and both planned and non-planned schemes will be critically considered every year. Such a justification will be focussed on the evaluation of discrete programmes, activities or other functions of a decision unit which may be a college, university teaching department or any administrative section of the university. However, for all managerial levels and departments, the objects and accomplishments can be identified for independent units and not for the total unit (university) as a whole.

While doing so, the probable effects of different amounts of performance levels on the achievements of objectives will be analysed. For the purpose of budgetary review, analysis, and decision making, decision packages will be used. Reallocation of resources for educational and academic activities will be done and programmes and activities and funding levels will be ranked in order of priority.

Operational Planning

In the traditional budgeting process, overall budgets are prepared by budget preparing authorities although they consider the area requirements, but a system is yet to be developed for formulating a scientific method of area budgets. The proper role of budgeting in planning process is not merely to show the financial figures but to help in detailed analysis, planning, control and management of the financial system required to achieve the objectives of planned programmes. This is what Zero Base Budgeting (ZBB) emphasises on. In the words of Dr. D.L. Joshi "PBR (Planning Budgeting and Review) system is a pivotal aspect of scientific budgeting". In formulating a budget using the ZBB process, an agency enters into three phases of management : planning, budgeting and review. In the process of ZBB, all these three stages of management are linked into one system. That is to say ZBB is a management concept linking planning, budgeting, review and operational decision making into a single process. ZBB is not the only management tool in the above PBR system, other techniques such as Management by Objectives (MBO) work measurement, cost-benefit analysis, and programme evaluation review technique are some of the other techniques that supplement the new PBR. Thus, ZBB technique is not meant to replace management system already in existence but to build upon those already in existence. The relationship between planning and control has to be carefully looked at, especially in the context of budgetary control in university administration. Budgetary control involves a recurring cycle of activities starting with the preparation and approval of budget which clearly is a planning activity. This budgetary preparation, in fact, is a principal means of achieving control. During the budget year, many activities occur that clearly fit the definition of control but simultaneously as a part of the same budget process there may occur an activity called budget revision which is planning :

Keeping this in view, following guidelines should be kept in mind while formulating the budgeting process for management of educational institutes and universities.

(1) Evolving a long-term planning and management perspective of education;
(2) Decentralization and creation of spirit of autonomy;
(3) Emphasis on involvement of teachers, students and administrators in the process of management of the university; and

(4) Adoption of principle of decentralization.

It will be thus observed that new education policy for higher education emphasises creation of more resources for making the system work better for long and short-term planning which are part and parcel of Zero Base Approach. Such emphasis on planning of education clearly establishes the relevance of ZBB for Indian education system for which resources have to be based on needs of different universities and programmes appropriate for their development.

Performance Budgeting

Performance budgeting is a technique which is greatly neglected in university administration. In real sense, performance budgeting is an area not yet put to practice due to orthodox accounting procedures and complicated nature of the structure of educational administration. Consequently, there is not enough information on heavily loaded work areas, and dry work areas, thus unit cost of administration of a particular activity cannot be ascertained. Also, proper analysis of performance and achievement of objectives is not possible, nor has there been sufficient decentralization. In order to improve the effectiveness of administration and increase the per unit utility cost ratio, it is necessary to give more emphasis on performance budgeting.

Decision Unit and Decision Packages

Taking into consideration the above facts, decision packages and decision units be formulated, ranked or prioritised and reviewed, and budgets prepared for allocation of resources for the chosen decision packages.

Here it is necessary to decide intially, what are the decision units to be evolved ? Ideally a decision unit, considering university administration as a focal point, will be a college, a university teaching department and/or any administrative section of the university within the amit of university. These decision units will have to prepare decision packages.

However, in the formulation and development of decision packages, management at the highest level will have to provide necessary guidelines.

The UGC, the directorate of education, ministry of education and university authorities will have to provide the guidelines by taking into account the situation in different universities, autonomous bodies, institutes, colleges and regions. However, these are only the basic hints which indicate targets considering the broad aim of education in Indian context. The operational or quantitative targets will have to be worked out according to demands, requirements, potential capacities, strengths and weaknesses of each individual decision unit. This will need a properly channelised broad based but careful decentralised planning. Thereafter, the most appropriate strategies for implementing and monitoring programmes should be devised. In adopting an appropriate strategy suited to a particular decision unit, the resource requirements, and the needs of regions and units are important considerations.

The Government of Maharashtra's circular has defined a decision unit as "A programme or organizational entity for which budgets are prepared and for which a manager makes decision on the amount of spending, scope, direction and the quality of work to be done". Dr. P.L. Joshi has defined a decision unit as "a decision unit may correspond to those budget units defined by the traditional budget procedure. It may be capital projects, special work assignments, or major projects". In practice, the management usually defines it as "organisation or programme level at which decision of each manager is to identify additional units, if appropriate".

The university administration will have to choose the decision units bearing in mind the following guidelines :

(a) They should be located where a particular activity/operation can have meaningful identification and evaluation, such as, a college, a teaching department or any particular administrative section;
(b) The identification of a decision unit should be guided by the information requirements of higher level manager; and
(c) It should be ensured that these basic decision units selected are not of such a low level in the organizational structure as to result in enormous amount of paper work and review. Also it should not be so high as to prevent easy access and discussion for meaningful review of the work being performed.

A university administration, for example, can be regarded as having following decision units, namely,

(1) Teaching department ;
(2) NSS, Adult Education & Students' Welfare;

(3) Financial Administration:
(4) General Administration;
(5) (i) Examination;
    (ii) Confidential section;
(6) Academic Development & Affiliated Colleges Section;
(7) Development & Engineering Department;
(8) Establishment & Miscellaneous;
(9) Stores Section;
(10) Scholarships, UGC & Higher Education,
(11) Legal cell;
(12) Library:
(13) Computer Section;
(14) Printing Press;
(15) Hostel;
(16) Information & Guidance Bureau;
(17) Public Relations.

The list is neither exhaustive nor exclusive. A university may add or deduct as many decision units as it deems fit considering any particular activity as an independent unit.

For each of the decision units, decision packages will have to be evolved taking into account the activities under each unit. The decision packages as is defined by the brochure issued by Government of Maharashtra states that, it is a document or form with the following details:

(1) A description of the function;
(2) The goal(s) or objective(s) of the function;
(3) Specific measures of performance;
(4) The benefits to be derived from its funding;
(5) The projected cost of the package;
(6) Alternative ways of performing the same activity;

Padmanabhan has considered additional three activities to the decision package :

(7) The relevance of the activity/programme to the overall objective of the organization department in the present context;
(8) Yearly planning or phasing of the proposed activity; and
(9) The likely consequences of not providing the funds.

There should be at least three decision packages; the minimum, the current and the proposed level. The minimum level corresponds to performance at funding level below which it is not feasible to continue a programme. Such decision package should be self-contained as enables the review and ranking of decision packages.

Under each of the decision units, there shall be a number of activities which are of the decision packages. These decision packages will have to be evolved by each decision unit not at the top level but at the operational level. The administrative staff will have to be properly trained in the process of planning and management in order to design well defined and precise objectives.

Follow Up—The Last Step

The entire review and appraisal of the scheme would result in

(a) Complete elimination of schemes, programmes and projects which have lost their material utility or practical relevance;
(b) Reduction in expenditure on those activities whose importance has become secondary and funding them at a reduced level;
(c) Funding practically relevant activities at current level: and
(d) Funding the vital, important, useful and priority schemes at increased level.

From the minimum level, the managers, i.e. heads of the departments and administrators will have to show the benefits of the increased allocation. For this purpose, cost-benefit analysis or cost-effectiveness analysis can be used depending upon whether benefits can be quantified or not. In any case, the guidelines will have to be given by university authorities.

Success of ZBB in University Administration

The ZBB concept is not an entirely new and difficult technique which one has to implement in the university administration. On the contrary, it is an extremely logical approach to arriving at a budget that provides the essential services, yet ensures that an organization is staying within its means. The most difficult aspect of ZBB that requires special attention is the implementation process and carefully defined implementation strategy.

The important pre-requisites for successful implementation of ZBB are :

(1) A well structured set of criteria for workload measurement;
(2) Clearly defined set of goals and objectives for the university as a whole and for each of its departments;

(*Continued on page 11*)

Practising English in Science and Technology

R. K. Singh*

Though English seems to be treated as a "service" subject in relation to the main courses of technology, it is unfortunate that an ELT teacher in a technical institution hardly ever receives the input from the specialist subject teachers that is so essential for successful ESP practices. Lack of resources and lack of interdepartmental cooperation hamper his/her role in the classroom, just as he/she is virtually forced to operate in a generally discouraging situation with a low-level acceptability.

Some of the constraints that I had to face in my teaching the ESP course at Indian School of Mines (ISM)[1] have included (i) teaching with recourse only to chalk and blackboard and materials in library (selecting suitable teaching materials from technical journals/books available there for mostly writing on the board or dictating in the class); (ii) getting duplicating/cyclostyling facilities only rarely (even if the institution has about a dozen plain paper photocopiers and several duplicating machines); and (iii) forgetting about OHP, cassette tapes, audio-visual aids and manpower support (incidentally, ESP at ISM has been managed with only one full-time teacher and two part-time teachers). I have always felt the management of the institution is not clear in which direction language teaching should proceed, just as it has been reluctant to fill up the vacant posts or strengthen the Department.

Need for a Textbook

The third phase of the ESP project at ISM—reviewing and revising the materials produced—scheduled for 1988 has been abandoned for want of organisational support. Even though a textbook, '*Using English in Science and Technology*' has been successfully published in 1988, the fact is there was no institutional sponsorship or encouragement to bring out the book. The necessities of a classroom situation that demanded recourse to a readymade material for use/practice, prompted its publication, without the sophistication of a high-profile ESP materials production process. Suffice it to say, the manuscript was simply a transformation of learning/teaching experiences I had since the adoption of the new syllabus in 1984-85 and it was published without any internal or external assistance.

Rationale of 'Using English in Science and Technology'

Since an exclusively technical text reading based ESP had generally not proved interesting to students in the past,[2] so I thought within the framework of lecture method and limited period of teaching, it could be possible to develop and refine certain activities/functions/skills by explaining and illustrating their models to students most of whom think they already possess a reasonable level of English. I also thought the students could manage their language use with whatever language+subject knowledge they already possessed or acquired in previous science classes. This was possibly a practical necessity because students have often been reluctant to 'learn' English (in science/technology) as they know subject teachers are not demanding nor have they (students) any vital language difficulty in learning their engineering or science subjects.

Moreover, it was also necessary to keep in mind the prevalent system of teaching English Language in technical institutions and English teachers' (mostly with English literature background) attitudes vis-a-vis the various constraints they face. Though in the last five-six years, there has been a gradual decline of a 'liberal studies' approach to English for science and technology students in institutions where English is both a 'reading language' and 'teaching language', teachers have shown interest in practising EST without shunning pure literary critical appreciation (and even Linguistics) which has no immediate or future uses as far as the students' communication abilities are concerned.

Priorities Altered

The priorities of ISM syllabus, adopted in 1984-85, too had to be altered keeping in mind the 'hard facts' of the institution, department, administration and students' own motivation level in the classroom. Though more emphasis was given to productive skills refinement without neglecting receptive skills, let me frankly admit, qualitatively the textbook (*Using English in Science and Technology*) was finally a compromise between the needs of EST learners and the publishers who were interested in materials that might be generalised to EST situations elsewhere

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**Head, Department of Humanities and Social Sciences, Indian School of Mines, Dhanbad-826004.*

(like Indian Institutes of Technology, Regional Engineering Colleges, and Regional Institutes of Technology etc.) in the country.[3] The syllabus as adopted stressed speaking and listening skills development more than writing and reading skills, but the book in actual practice has turned out to emphasise writing skills more than other skills.

Search for Innovation

The book, result of a search for innovation in my own teaching situation, is not a collection of extracts for reading/comprehension but for understanding uses of English in science/technical contexts for a variety of functions/activities by those who are willing to appreciate niceties of technical communication in their academic contexts. Organised not on a stereotyped units format collecting various texts, and written not by a professional textbook writer but by a teacher aware of the constraints of his teaching situation, and/or frames of reference for judgements to be made, the book is basically to help, repair certain deficiencies of secondary level teaching and making English teaching at post-secondary level relevant and meaningful in a new way.[4]

Eclectically structured as it is (with something of 'English in Focus', 'Nucleus' and 'Lancaster School' and demonstrative and practice approaches), it is largely developed from the notes and exercises I have been using in my classes. It does not neglect exposing either the "rhetorical coherence of discourse" or "the grammatical cohesion of text"; it integrates earth, and mineral sciences, engineering/technology, and formal and informal language use. The object has been to show and explain how language is used and how one can experience using it as "an instrument of communication", to convey information/understanding about something : Students in ESL contexts must get plenty of opportunities to use the language with involvement of their existing knowledge rather than just doing exercises about English[5] at the end of a class, they must have a sense of learning 'something new/worthwhile, a sense of achievement; they must experience creation of a specific subject content with awareness of the forms of language. And, it is gratifying the object has been achieved to a reasonable level.

Organisation of the Book

As the table of contents (Appendix 1) of *Using English in Science and Technology* would reveal, the first section in general, dealing with characteristics of scientific and technical writing and describing and analysing the process model of writing. The second and central section has twelve lessons on aspects of English in scientific discourse such as describing, instructing, classifying, explaining, comparing and contrasting, hypothesising and generalising, besides using impersonal passive voice and using thought connectors. The third section seeks to teach outlining paraphrasing and summarising. The last two sections on 'note-taking' and 'organising references' are meant to provide practice in these two aspects of professional/academic writing.

The book has several relevant exercises, though not graded, at the end of each lesson which can be freely supplemented with exercises from other publications. The teacher can easily build on the material provided just as he/she can help students to think and write logically and clearly about their subject.

Using the Book : After a Semester

Though the time in an hour-long lecture class was mostly divided between 'lecturing' (to explain/give examples) and practising the related exercises that involve individual, group and/or pair work, I always encouraged different responses to the same exercise/question, never allowing an activity to turn mechanical. I also took care that each student tried to give out his/her best and benefitted from what others did or said in the class.

I believe the materials/exercises turn communicative if used communicatively with a particular purpose/function in mind (like verbalizing visual information, i e. table, chart, graph, etc., orally or writing) and the teacher is sympathetic to students' performance It is a good progress if students' could turn sensitive to their expression and realised there was still scope for them to improve.[6] With this attitude on my part, I am happy I have not encountered any suspicious response or hostility from my students at any stage though I don't deny at times they did show reluctance in doing longer exercises (beyond the length of two paragraphs). However, the verbal feedback that I have received from them has also been encouraging, and this has been a positive enough motivation to apply myself further to the tasks ahead.

Question Bank

As part of the Exam Reform exercises at ISM, the Dept. of Humanities and Social Sciences also participated in question banking and developed a 310-item question bank in EST, perhaps for the first time of its kind in EST practices. The Question Bank was ready for use by December 1988. This should also take care of 'lack' of practice materials if any, for students' use both inside and outside the class.

The experience was further utilised and materials for a new book *Practising English in Science and Technology* (in press) were developed as a supplementary to *Using English in Science and Technology*.

Conclusion

Using English in Science and Technology is indeed an instance of a compromise vis-a-vis various practical problems that arise in producing and publishing ESP teaching materials and at the same time promoting ESL students' motivation to communicate in English in as creative a way as possible with a compromise again with structure and function and formal and creative modes. Even if it may appear acceptable, economical and relevant, or a mixture of treatise-cum-workbook (rather than a text-cum-exercises as generally available), it should help those teachers of English who may have no formal exposure to ESP theories/approaches but are willing to venture into ESP with a view to practising a meaningful language teaching (with a learner centered approach) in their classes, most likely without any modern teaching aids. It is new in Indian ELT, if not a new episode in ESP on the sub-continent and it should therefore be rewarding to evaluate it from the point of view of ESP development and practices in India in general, and the extent of its contribution to innovation and change in technical communication teaching in particular.

Notes and References

1. Reported in *University News*, Vol. XXVII, No. 26, June 26, 1989.
2. Prior to the adoption of new English Syllabus at ISM we had used Graham Graves' *Foundation : English for Science Students* (New Delhi : OUP, 1975) without any positive response from students. Even my first experience of ESP teaching with A.J. Herbert's *The Structure of Technical English* (ELBS and Longman, 1965) to diploma course students at Royal Bhutan Polytechnic, Deothang (E. Bhutan) in 1974-76 was not rewarding.
3. It's a different thing these institutions won't adopt the book or readily accept it as a supplementary to the books already in use.
4. Though about 55% students accepted they learnt a lot through the EST course at the first semester, about 34% students said they learnt nothing (March 1989)
5. Cf. Tom Hutchinson and Alan Waters. "Creativity in ESP Materials or 'Hello ! I'am a Blood Call'," *Issues in ESP* (ed. Alan Waters), Pergamon Press & Lancaster University, 1983, pp 99-122
6. As per their responses (in March 1989) to a short questionnaire to collect feedback as also to assess their views after two semesters' teaching of English for Science and Technology and academic communication, though the course was judged as "boring" by about 47% students, it was largely "useful" (86%) and serving their purpose with "a lot of learning" (over 80%) just as speaking continued to be the skill they wanted to improve (78%). Howsoever self-contradictory comments they offered, equal number of students considered learning EST as very important and Moderately important, and over 84% of them appreciated its value for their future career. Yet, over 50% of them clearly wanted English to be taught as an optional subject and 36% through self-study materials.

Reforming University Budgeting

(*Continued from page 8*)

(3) An accounting system capable for generating financial and budgetary data for organizational units and programme efforts;

(4) Commitment and involvement of both top and lower levels of management;

(5) Effective design and management of the system;

(6) A trained budget staff to guide the ZBB efforts and coordinate the entire change over in the budget process;

(7) Preparation of ZBB budget manual to plan complete budget activity; and

(8) Prepare a calendar of important financial events affecting financial position of the university.

Conclusion

The whole idea behind introducing ZBB is to rationalize financial administration of university. So, the essence of implementation of this technique lies in its effectivity. For the success of ZBB in university, it is necessary to concentrate on quality of information, cooperation of staff and their acumen in implementing the technique. As ZBB grows from infancy to maturity, its true value will be judged by the extent to which it improves the quality of administration. Managers and administrators learn from experience. □

Freedom, Peace and Democracy

Central Institute of Higher Tibetan Studies, Saranath recently organised a Special Convocation to confer the degree of Doctor of Divinity (*Honoris Causa*) on His Holiness the Dalai Lama. In his address on the occasion His Holiness Dalai Lama said, "...Freedom and Democracy really are crucial for the development of human society and for creating peace and calm within it. Thus, there is presently an urge for Peace, Freedom and Democracy, which seems to be increasing everywhere everyday. At the root of this is an inclination away from anger and violence and at the root of this in turn are such qualities as love and compassion. All these are now becoming increasingly evident". Excerpts

Convocation

When I was small child the way we studied in Tibet followed the Indian system that had been pursued in such centres of learning as Nalanda University. Due to the kindness of many spiritual masters I also studied the major Buddhist texts in this way. The approach we adopted was based on the open minded practice of hearing, contemplation and meditation, which had been the tradition of the early Kadampa Masters of Tibet. In brief, this meant that whatever we learned through study, hearing and contemplation was integrated into our mind-streams and, as far as possible, was applied in actual practice.

These are the circumstances, following the noble tradition of combining the teaching and practice of Dharma, in which I have led my life. I am now fifty five years old and over the years, even in the most difficult and confusing periods of my life the principal source of my mental peace and strength had lain in what I have studied and what I have put into practice based on these studies. This I have confirmed through my own experience.

Many of the major and minor subjects studied in Tibet, the Land of Snows, generally known nowadays as 'the roof of the world', originated in the noble land of India. Apart from Buddhist Doctrine, these included such disciplines as medicine, astrology, poetry and painting. Having been received from India, they were then nurtured and developed in Tibet itself. Therefore, it is safe to say that the spring from which so many Tibetan cultural traditions have flowed lay in India.

In more recent times, unspeakable misfortune has overtaken my country, Tibet, because of which more than one hundred thousand Tibetans including myself have had to flee our homeland and now live in exile. Of these, the majority are living in India and this has created the opportunity for us to preserve the precious traditions of scholarship and spiritual practice that, like Jewels, we received from Indian scholars in the past and kept alive in Tibet for so many centuries. Now that we Tibetans have fulfilled our responsibility by maintaining these precious jewels and returning them to their rightful owners. It is up to you how you take care of them.

In the twentieth century we have become increasingly aware of the tremendous variety of people in the world and the different experiences they have. If we gather all these together and compare them with our own personal experience it is clear that we all clearly long to live in genuine peace and happiness and that freedom and democracy are important conditions for doing so. This is not just a topic of polite conversation, for Freedom and Democracy really are crucial for the development of human society and for creating peace and calm within it. Thus, there is presently an urge for Peace, Freedom and Democracy, which seems to be increasing everywhere everyday. At the root of this is an inclination away from anger and violence and at the root of this in turn are such qualities as love and compassion. All these are now becoming increasingly evident.

In addition, it is becoming clear that external progress alone cannot bring mental peace This has been the century in which people have begun to pay greater attention to inner science, the path of mental investigation and development. Through our own experience we have arrived at a point where there is a new awareness of the importance and value of mental qualities. Therefore it seems to me that the explanations of the mind and its workings presented by ancient scholars in general, and particularly those from India, are becoming increasingly valuable in our time.

Here in this century it is a time of economic and material development. It is true that without external progress human society faces many problems, so it is undoubtedly necessary to place some emphasis on external improvement. Even so, it is important at the same time to maintain those sciences related to the mind and internal development for which Indian traditions have existed since ancient times. If it is possible to combine these two, material progress and inner mental development, then the distinctive features of the ancient Indian traditions will be preserved. But equally important, it will be conducive to bringing about peace, friendship and a stable and relaxed society in terms of individuals, families, social communities and finally the nation itself. For these reasons, I would ask all you scholars gathered here to make unceasing efforts to establish a society whose very fabric is infused with compassion, love and friendship. For my own part, I commit myself to the service of others as much as I can. As the great master Shanti Deva has said in his Bodhisattvacharyavatara :

> As long as space endures
> And for as long as sentient
> beings remain,
> May I be able to abide
> that long
> And eliminate the sufferings of
> sentient beings.

This is how I pray myself and I have taken a commitment to put it into practice as much as I can. ☐

BIRLA INSTITUTE OF TECHNOLOGY

MESRA : RANCHI

(A Deemed to be University)

ADMISSIONS NOTIFICATION—1990

Bachelor of Engineering & B. Pharm. (4-Year) Degree Course

Entrance Examination for admission to (1) Bachelor of Engineering (4-Year) Degree Course in Civil, Computer Science, Electrical & Electronics, Electronics & Communication, Mechanical and Production Engineering and (2) B. Pharm. (4-Year) Degree Course in Pharmaceutical Sciences will be held on May 26th & 27th 1990 at the following Centres :

Agra, Ahmedabad, Allahabad, Bangalore, Bareilly, Bhagalpur, Bhopal, Bhubaneshwar, Bombay, Calcutta, Chandigarh, Dehradun, Delhi, Gauhati, Gaya, Ghaziabad, Gorakhpur, Hyderabad, Jaipur, Jamshedpur, Lucknow, Madras, Muzaffarpur, Patna, Ranchi, Sindri, Trivandrum, Varanasi and Vijayawada,

provided sufficient number of candidates opt for the proposed centres.

Qualifications

For Bachelor of Engg : I.Sc., or 10+2 or equivalent examination with Physics, Chemistry and Mathematics, for B.Pharmacy with Physics, Chemistry and Biology. Maximum age limit 21 years on 1st October, 1990. Those appearing this year at the qualifying examination are also eligible to apply.

Schedule of Examination

Saturday, 27th May, 1990 — 9 A.M. to 11 A.M. Mathematics,
1 P.M. to 3 P.M. Physics
and
Sunday, 27th May, 1990 — 9 A.M. to 11 A.M. Chemistry
1 P.M. to 3 P.M. Biology.

Application Form can be obtained by post on non-refundable pre-payment of Rs 25/- by crossed postal order payable to the Registrar, Birla Institute of Technology, Mesra, Ranchi. The request should accompany a self-addressed envelope of size 25 x 12 cm. affixed with postage stamps of Rs. 1.80 paise clearly mentioning the form required i.e., Bachelor of Engineering or B. Pharmacy as the case may be.

Eligible candidates who wish to appear for both the courses i.e.. B.E as well as B Pharmacy may submit only one application form of either B E. or B. Pharmacy indicating clearly on the top of the application form that they wish to be considered for both the courses.

22-1/2% seats are reserved for SC/ST candidates.

The last date for receipt of completed application form is 10-4-1990.

G.C. Singh
CO-ORDINATOR ENTRANCE EXAMINATION & O.S D.

Dated : December 11, 1989.

Genetics, Health and Disease

The School of Life Sciences of the Guru Nanak Dev University, in collaboration with the University Grants Commission, organised an international symposium on 'Genetics, Health and Disease', at Amritsar recently. Inaugurating the seminar the UNESCO Director, Dr. M. Derkatch, stressed the need for Inter-correlation between the fundamental sciences and the society to improve the quality of human life. A balance between medical science, education and culture, not only of human beings but also nature, should inspire the people to become health (diet) conscious and fight diseases.

Dr. Derkatch, who is a known scholar of phonetics and physiology of speech perception, said that the symposium should provide an opportunity to apply fundamental sciences to every day life. He called for reserving the genetic diversities of different people. He also explained the philosophy of the UNESCO and how it was promoting science and technology in the South and Central Asia.

Dr. G.A. Harrison from the Oxford University in his keynote address spoke on "Human Biology of Health and Disease". He elucidated the "stress syndrome", its causes and effects on children, working women and housewives, labour and other sections of the society. His analysis was that environment played a significant role in causing and relieving the stress. He explained why on certain days people were in 'high spirits" and on other days "under the weather". He also referred to the stress related diseases.

Dr. Khem Singh Gill, Vice-Chancellor, Punjab Agricultural University, Ludhiana and Bhai Mohan Singh, Chairman, Ranbaxy Group of Industries were honoured for their contribution to the cause of "science and society."

Mr. G.S. Randhawa, the Vice-Chancellor of Guru Nanak Dev University, who presided, said "Contact" among the fraternity of scientists from two interrelated fields was the "bloodline of expanding knowledge". He hoped the students of the university will benefit from the deliberations of the seminar.

The Organising Committee Chairman, Dr. Jai Rup Singh in his introductory remarks said cross-fertilisation of ideas among the scientists will enable open new horizons on promoting human genetics research. He however, cautioned that the new knowledge should not be "commercialised" in one particular field—sex determination. It was a matter of concern because its unethical application led to female foeticide.

Over 150 eminent scientists from India and 20 foreign countries participated in the four-day symposium at which over 150 research and scientific papers were presented.

Teacher Development and Communicative Skills

The ELT unit of the Department of English and Comperative Literature of the Madurai Kamaraj University organized a 6-day seminar on Teacher Development and Communicative Skills to help college teachers to improve their professional competence. Inaugurating the seminar Dr. M. Lakshmanan, Vice-Chancellor of Madurai Kamaraj University, emphasized the value of English and observed that students who could communicate effectively also achieve better in their majors.

Dr. Ghosh, the chief resource person from the Central Institute of English and Foreign Languages (CIEFL) highlighted the importance of "training", which influences the nervous system of any trainee thus causing changes in one's cognitive and affective domains. Though training institutes cater to teacher training, self-training, he said, was fundamental as it alone gave pedagogical courage to face local problems and innovate solutions. Dr. Joseph, Director of the Academic Staff College, Bharathidasan University, Trichy, initiated the participants to the preparation of exercises by making student experiences as the base for achieving fluency in spoken English than the pre-planned methods by the teachers Dr. Louis Xavier of Loyola College, Madras emphasized the need for introspection on teachers' own learning and teaching, the need for sharing one's experiences with fellow teachers in study groups, seminars and conferences which helps one to adopt the role of a 'facilitator' and 'monitor' of student learning.

The seminar stressed the need for practical material production leading to curriculum reform, which could done by teachers initiating small action-research projects in classrooms.

The seminar was co-sponsored by the University Grants Commission and the Central Institute of English and Foreign Languages, Hyderabad.

B.Sc. Health Sciences

The Faculty of Rural Health and Sanitation of Gandhigram Rural Institute (Deemed University) proposes to introduce a three-year B.Sc course in Health Sciences (English medium) from the ensuing academic year. This is a residential course, open to male and female students from all over India, specialized in Science stream. Candidates working with Government and non-governmental agencies are welcome on deputation.

For further information, contact : The Dean, Faculty of Rural Health & Sanitation, Gandhigram Rural Institute (Deemed University), Gandhigram-624 302, Tamilnadu.

National Seminar on Indo-Anglian Fiction

Government Postgraduate College, Dharmsala (H.P.) will host a UGC sponsored National Level Seminar on Indo-Anglian Fiction on March 14-16, 1990. Scholars, Writers and Novelists of national and international eminence from India and abroad are likely to participate and present papers on various subjects on Indo-Anglian Fiction. Dr. Atma Ram, Joint Director of Education, Himachal Pradesh Government, will deliver the Keynote Address at the seminar.

News from Agril. Varsities

ISAE Meets at HAU

Shri Om Parkash Chautala, Chief Minister of Haryana, exhorted Agricultural Engineers to pay attention to the design and development of low cost and energy efficient agricultural machinery and its quality control, safety measures, and standardization. He said, "Improved agricultural machinery is of significant help in completing agricultural operations quickly and efficiently and is capable of doing work with uniform quality". Shri Chautala was inaugurating the 26th Annual Convention of the Indian Society of Agricultural Engineers at HAU, Hisar recently.

Shri Chautala said, "Though much has been done to develop agricultural machinery, mostly the big farmers have been benefited from the mechanical innovations in agricultural sector. A major handicap in making full use of these innovations is lack of skilled manpower. So the programme for the transfer of technologies in this regard must also be accelerated and the local and village artisans must be fully involved in this process". He further said, "The greater challenges that the agricultural engineers face are in the areas of post harvest technology, rural industrialisation and the agro-based industries including food processing industries. The overall analysis of the present status of the post harvest technology in India shows that the food, feed and fibre industries have concentrated in urban areas resulting in capital drain from the rural to the urban areas, very low rural employment opportunities and increased gap between the rural and the urban population".

Expressing concern at the depleting sources of fossil fuels and their high costs, Shri Chautala said, "Due attention should be given to the development of the technologies using renewable sources of energy as these can provide energy indefinitely. More research efforts on the biogas technology and the biomass gasification using crop wastes need to be intensified".

"Strategies for agricultural development must aim at achieving the national objective of food security, providing gainful employment, improving the socio-economic condition of the rural masses and the promotion of agricultural expertise. In this context the agricultural engineering is an important input to this whole scenario", Shri Chautala added.

Dr. K.N. Nag, Vice-Chancellor, Rajasthan Agricultural University, Bikaner, who presided, said, "Increased attention should be paid to early involvement of industries in formulation of agricultural development programmes. Particular emphasis should be placed on the utilisation of the potential of small and medium size machinery manufacturers". He added, "In the area where canal water is used for irrigation, the present practice of over irrigating the fields or flooding the field with water has already created environmental problems and we should take lesson from this to make best use of investment made in irrigation resources".

Outlining the priorities. he said "Watershed development based on economic returns, judicious water harvesting technology, conservation of water and ground water harvesting and management should also be kept in view.

Sh. A.L. Chaudhry, Vice-Chancellor, Haryana Agricultural University, emphasised modernisation of agricultural engineering and said, "Agri-engineers cannot be kept in isolation from incoming modern technologies. So computers will play a vital role in agricultural information system and management. Further designs of farm machinery and specialisation studies on computers will improve the existing designs". Dr. Chaudhry pleaded for specialisation in newly emerging areas at postgraduate level. He asked the engineers to widen their area of activities and strive hard to update the technology keeping pace with the rapid changes that are taking place.

Over 300 delegates including Dr. P.V. Shenoi, Secretary, Department of Agriculture and Cooperation, Govt. of India and Dr.A.M. Miechal, Director, Indian Agricultural Research Institute, attended the seminar.

Breakthrough in Mastitis Treatment

Mastitis (inflammation of Mammary gland) has been a big handicap in the development of dairy industry throughout the world. Due to selective breeding for high milk production this problem has been all the more acute. So far the malady has been treated with the use of chemotherapeutic agents since bacterial infection had been incriminated as the aetiological factor. This procedure has not been very rewarding. In addition the chemotherapeutic agents have their serious side effects like bacterial resistance to drugs, allergic reactions in sensitive human beings, etc., etc. Moreover the cost of treatment is very high.

A team of Veterinarians of the Punjab Agricultural University have observed that mastitic milk is deficient in citrate content and has high pH (alkaline). Citrate radical is very essential for milk synthesis, its deficiency leads to decreased, defective or no milk secretion depending upon the situation. Citrate is also responsible for sequestration of calcium ions in the milk and its deficiency results in clumping of calcium in the udder and resultant tissue injury making the udder more susceptible to bacterial invasion.

These experts have reported that following oral administration of 12 gm trisodium citrate in 250 ml of water to a buffalo or a cow for 4-6 days cures the condition. Data of study has been reported on 10 cows.

Following this treatment the citrate content of milk and pH are restored to normal levels, bacterial count falls and normal consistency of milk returns. The new hypothesis gives a radical treatment at a low cost. It also eliminates the risks of antibiotic use for the treatment of this disease. In the opinion of the experts mastitis is primarily a metabolic disorder.

AIU News

Training Programme for University Administrators

Prof. Rais Ahmed, Former Vice-Chairman, University Grants Commission and Vice-Chancellor, University of Kashmir, delivered the Inaugural Lecture at the Training Programme for University Administrators organised by the Association of Indian Universities on 19-24 February, 1990. Prof. Ahmed made the point that in a university all important decisions were taken by teachers and the senior administrative staff did not always participate in making of such decisions. Nevertheless administrators interpreted those decisions as they have to act as intermediaries between the decision makers and those affected by the decisions. The administrators' understanding or lack of understanding thus became significant.

Picking up the word 'development' from the title of his Inaugural Lecture "University System in the Developmental Context" Prof. Ahmed observed that development was a complex process and also an open ended question in so far as there could be different views about development. He listed the following factors that made India 'a developing country':

(1) About 40% of the population lived below the poverty line and in gross terms the number of people living below the poverty line increased;
(2) Over 60% of India's population was illiterate and again the number of illiterate people was increasing;
(3) High rate of unemployment;
(4) Very low per capita Gross National Product (GNP); and
(5) Imbalances in regional development.

Prof. Ahmed said that in view of the multi-lingual and multicultural nature of the Indian society, new structures had to be devised to ensure cooperation and coexistence. He emphasised that environmental problems like pollution had to be tackled urgently.

Prof. Ahmed stressed that education had a social responsibility. It was no longer uncritical and did not play a 'textbook role' or a passive role. The intellectual community had an important role to play in this respect by analysing our own reality. He felt new ideas and proposals were meeting tremendous resistance in the universities and pleaded that such proposals should be examined with sympathy. He wanted universities to attend to the needs of people and not only the wants of people. The former called for a sense of anticipation. The second priority area was that of raising academic standards. A sympathetic bell must ring in university administrators when reforms are suggested by such bodies as the Boards of Studies. Reform of the examination system, cooperative use of equipment and instruments were the other areas listed by Prof. Ahmed where universities must take positive action. In this context he also referred to the new administrative structures for higher education system proposed in the New Education Policy 1986.

University administrators in charge of academic affairs at the level of Deputy Registrar from about a score of universities attended the programme.

News from UGC

INSAT 1-B Programme of UGC

Between 1st March to 7th March, 1990 the following schedule of telecast on higher education through INSAT 1-B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

1.3.90

"Emerging Trends in Computers"
"Modern Methods of Archeological Excavation"
"Discovery"

2.3.90

"Launching a Space Craft into a Geostationary Orbit"
"Check Mate"
"Weather"

3.3.90

"Made in Chicago"
"Ritual Art Sanjhi"

4.3.90

No Telecast

5.3.90

"The Race : A Programme on the Cyclotron"
"Money Lenders & Indigenous Bankers"
"Raw Materials : Cotton"

6.3.90

"Hydrogen Atom"
"Understanding the Media : An Introduction"
"Bio - Environmental Control of Malaria"

7.3.90

"N.D.T. Series—III : Eddy Currents"
"Cartography—Interpreting Maps—II"
"Modern Genetics & Human Welfare—VIII"

2nd Transmission

12.00 noon to 1.00 p.m.

1.3.90

"Graphics With Microcomputers—I : Introduction"
"Sticks in Rhythm"
"Devices of Language"

2.3.90

"Space Communications—Television and Radio Transmission, Reception, Telephony"
"Birds of No Frontier"

3.3.90

"UGC Educational Video Festival—I"
"Women and Sports"
"Handle With Care"

4.3.90

No Telecast

5.3.90

"Classical Mechanics—X : Conservation of Energy and Momentum"
"Entrepreneurs and Enterprise : Case Study—V"
"War on Rats"

6.3.90

"Transuranium Elements"
"Management of Classroom Teaching"
"Diseases of the Heart"

7.3.90

"Lead Acid Battery—Testing and Evaluation"
"Modern Genetics and Human Welfare—I"

Bharat Bhavan Hostels for National Integration

The University Grants Commission (UGC) has decided to establish Bharat Bhavan Hostels in selected universities throughout the country to promote and facilitate national integration, mobility of students from different states and growth of common culture. There will be at least one Bharat Bhavan Hostel complex in each State. The question of providing such complex in a Union Territory will be considered by the Commission on merits.

The Bhavans will be located on the campus of a university in a metropolitan city. The management of the Bhavan will rest with a committee headed by the Vice-Chancellor of the university and which will also have representatives from other universities in the city or the State. Each hostel complex will accommodate a certain percentage of students from the City/State where it is located, students from other states, and the Scheduled Caste and Scheduled Tribe, blind and disabled students from all the States, 30 per cent of the accommodation will be reserved for the girl students. The complex will also have an Information and Guidance Centre.

The implementation of the Scheme will require an estimated financial outlay of Rs. 100 crore. The UGC will approach the Government of India for additional funds for the scheme. The grants for each Bharat Bhavan Hostel Complex will be made available on 100 per cent basis by the Commission for the civil works, services, and furniture. The maintenance grant for the complex will be provided for a five-year period on 100 per cent basis by the Commission and thereafter the expenditure will be borne by the University or the State from its own resources.

News from Abroad

Restructuring Higher Education in America

The U.S. Education Secretary Lauro F. Cavazos called on college and university presidents at the American Council on Education's (ACE) annual meeting held recently to assume leadership in restructuring education in America today and develop a series of national goals to guide higher education into the 21st century.

Cavazos prefaced the goals by urging a national commitment to ensure that by the year 2000, "students from all population segments and economic groups who aspire to enter and complete programs of postsecondary education have equal access to a quality education". He urged that greater emphasis be placed on recruiting minorities and women into higher education and that colleges and universities make a greater effort to prepare minority faculty.

The six goals Cavazos set for higher education to reach by the year 2000 include :

- The gap in degree completion rates at both the associate and baccalaureate level between black and Hispanic students, on the one hand, and white and Asian students, on the other, should be narrowed.
- Fifty per cent of all bachelor's degree recipients should be able to demonstrate proficiency in a language other than English. Cavazos noted that only 10 per cent of students can demonstrate such proficiency now.
- All associate and bachelor's degree recipients should be able to demonstrate proficiency in college level math and science.
- All graduating students should be able to write coherent, grammatically correct papers and display a basic knowledge of world history, geography, and culture appropriate to their degree level.
- The number of U.S. college graduates completing doctoral programs in the basic arts, mathematics, sciences, engineering, and technological disciplines should be increased by 25 per cent, with the number of women, blacks, American Indians, and Hispanics in this group increased by 50 per cent.
- All students leaving colleges and universities should possess higher order critical thinking and problem solving skills needed to contribute productively to the economic and political life of the nation.

Addressing a luncheon plenary session, Cavazos questioned whether the requirements for degree programs have kept pace with the demands graduates face in the work place, and called on college and university presidents "to ensure that your degree programs give students what they need to prepare them for the challenges they will face tomorrow." Cavazos cited the area of teacher education, in particular, reminding annual meeting participants that "the quality of student that comes to your university or college is totally dependent on what is occurring in public elementary and secondary schools".

We Congratulate . . .

(1) Dr. Amrit Lal Chaudhary who has taken over as Vice-Chancellor of the Haryana Agricultural University.

(2) Shri D.K. Oza who has taken over as Vice-Chancellor of the Gandhigram Rural Institute (Deemed University), Gandhigram.

(3) Prof. V.K. Ahluwalia who has taken over as Vice-Chancellor of the Manipur University, Imphal.

(4) Dr. C. Balasubramanian who has taken over as Vice-Chancellor of the Tamil University, Thanjavur.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Gowda, M T. Ramaswamy. *Study of acquisition systems in university libraries in Karnataka : An analytical study.* Bangalore. Dr. A.Y. Asundi, Department of Library Science, Bangalore University, Bangalore.

Psychology

1. Indira, M.S. Kumari. *Psycho-social factors and behaviour problems in children.* Kerala. Dr. V. George Mathew, Prof., Department of Psychology, University of Kerala, Kariavattom.

Political Science

1. Banthia, Hukmichand. *The nature and scope of democratic decentralisation in the organisation and the working of the panchayati raj system in India : A case study.* Devi Ahilya. Dr. Arvind Maru, Prof., Department of Political Science, Govt. Girls Degree College, Indore.

2. Pathak, Sangeeta. *Dakshin asiyai kshetriya sahyog sangathan (SAARC) aur Bharat kee bhumika.* Devi Ahilya. Dr. B.R. Sadh, Principal (Retd.), Govt. Arts and Commerce College, Indore.

Economics

1. Chourasia, Manish. *Madhya Pradesh mein soyabean utpadon kee utpadan vipnan evam deerghkaleen vikas sambhavnaon kaa alochnatmak mulyankan.* HS Gour. Prof. H.C Soni.

2. Gupta, Anil Kumar. *Madhya Pradesh mein aluminium udhyog mein utpadan prabandhan, karamchari prabandhan evam audhyogik sambandhon kaa arthik vishleshan.* HS Gour. Prof. H.C. Soni.

3. Jose, V T. *Role of joint sector in industrial development : A comparative study of Karnataka and Kerala.* Kerala. Dr. G Karunakaran Pillai, Reader, Department of Economics, University of Kerala, Kariavattom.

4. Tiwari, Kalpna. *Krishi sanrachna evam utpadakta per sinchai kaa prabhav : Sagar sambhag ke sandarbh mein vishesh adhyayan.* HS Gour. Dr. M.L. Tripathi, Reader, Department of Economics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

5. Trivedi, Rajesh Kumar. *Madhya Pradesh ke kritrim resha vastra udhyog kee parivartansheel arthik pravrittiyon kaa alochanatmak mulyankan.* HS Gour. Prof. H.C. Soni.

Law

1. Bector, Sangita. *ILO standards on forced labour : Their assimilation and implementation through national programmes in India.* Panjab. Prof. Veer Singh, Department of Law, Panjab University, Chandigarh.

2. Gambhir, Kiran Jeet Kaur. *Jurisprudence of corrupt practices in the Indian Electoral System, with special reference to the provisions of the representation of the People Act, 1951.* Panjab. Prof. Virendra Kumar, Department of Law, Panjab University, Chandigarh.

3. Grewal, Rajinder Singh. *Juvenile delinquency and juvenile justice system in India with special reference to state of Punjab.* Panjab. Prof. Virendra Kumar, Department of Law, Panjab University, Chandigarh.

4. Gupta, Ram Prakash. *Rent control legislation and the problems of urban housing in India : A socio-legal critique with special reference to Delhi—The capital city of India.* Panjab. Prof. Virendra Kumar, Department of Law, Panjab University. Chandigarh

5. Gupta, Vandana. *A study of constitutional and legislative provisions renouncing practices derogatory to the dignity of women in India.* Panjab. Prof. V.K. Bansal, and Dr. N.K. Gupta, Department of Law, Panjab University, Chandigarh.

6. Oberai, Charanjit Singh. *President's rule and the changing perspective of the institution of governor in the light of emerging strains in the centre-state relationship in India.* Panjab. Prof. V.K. Bansal, Department of Law, Panjab University, Chandigarh.

7. Sahota, Kuljit Kaur. *International court of justice and the dynamics of emerging international legal order.* Panjab. Shri B.S. Grewal, Reader, Department of law, Panjab University, Chandigarh.

8. Shalini. *The theory of original intent and its deviations : A study of the development under the constitutions of India and the U.S.A. with special reference to Right to freedom.* Panjab. Prof. V.K. Bansal, Department of Law, Panjab University, Chandigarh.

9. Sharma, Aroma. *Correlational administration and criminal justice system with special reference to the State of Panjab and the Union Territory of Chandigarh.* Panjab. Shri R S. Grewal, Reader, Department of Law, Panjab University, Chandigarh.

Education

1. Krishnan, Neena. *Preparation of models of compensatory programmes for improvement of English writing competency of predegree students.* Kerala, Dr. Vasantha Ramkumar, Head, Department of Education, University of Kerala, Trivandrum.

2. Mathew, George. *A study on the management of autonomous scheme in colleges.* Kerala. Dr. A. Sukumaran Nair, Pro-Vice-Chancellor, University of Kerala, Trivandrum.

3. Nayak, Suman. *Self concept and level of aspiration as a function of creativity and academic achievement.* HS Gour. Prof. S.P. Ahluvalia.

Commerce

1. Kale, Ajay Kumar S. *Madhya Pradesh rajya utpadan shulk : Ek vishleshnatamak adhyayan.* Devi Ahilya. Dr. B.S. Bhandari, Govt. Arts and Commerce College, Indore.

Home Science

1. Kapuria. Sujata. *Impact of a programme of food supplementation during pregnancy on birth weight of babies.* Devi Ahilya. Dr. (Smt.) Kamlesh Sharma, Dean and Chairman and Prof., Department of Home Science, Govt. New Girls Degree College, Kila Maidan, Indore.

Management

1. Sankaran, A.G. *An inquiry into the cost and time escalation of public sector projects.* Kerala. Dr. P.V.S. Namoodiripad, Managing Director, Hindustan Latex Ltd, Latex Bhavan, Poojappura.

HUMANITIES

Language & Literature

English

1. Zachariah, George. *Absurd drama : Its influence on Modern Malayalam drama.* Kerala. Dr. K. Radha, Reader, Institute of English, University of Kerala, Trivandrum.

Sanskrit

1. Baby, V. *Gitagudharthadipika : A study.* Kerala. Dr. K. Maheswaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

2. Bhanumathy, T.K. *Sanskrit dramas of Kerala—a historical survey.* Kerala. Prof. R Vijayan, Department of Sanskrit, University of Kerala, Trivandrum.

3. Meerabhai Amma, S. *Episodes of Mahabharata : A study.* Kerala. Dr. P. Syamaladevi, Lecturer, Department of Sanskrit. University of Kerala, Trivandrum.

4. Panicker, V. Sisupala. *Vedantakalpalatika : A study.* Kerala. Dr. K. Maheswaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

5. Radhamony, N. *Puranic versions of Kumarasambhava : A study.* Kerala. Dr. K. Maheswaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

6. Raveendran, D. *Bearing of Sankhyakarika and Mandukyakarika on Mayavada.* Kerala. Dr. K. Maheswaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

7. Udaya, M.S. *Freedom of women in Manusmruti.* Kerala. Dr. K. Maheswaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

Hindi

1. Chaturvedi, S.M. *Sameekshak Acharya Nand Dulare Vajpai aur chhayavadi yug.* HS Gour. Dr. R.D Mishra.

2. Dubey, Uma Shankar. *Acharya Nand Dulare Vajpai kaa vrihatshrai- ambandhi vivechan.* HS Gour. Dr. R.D Mishra.

3. Sindhu, K C. *Swathanthry thar Hindi gadya sahitya mein mithakom ka upayog.* Kerala. Dr. C.P. Rajagopalan Nair, Prof., Department of Hindi, University Evening College, University of Kerala, Trivandrum.

4. Sobhanaraj. J. *Bharathendu kaleen Hindi nibandh.* Kerala. Dr. N.E. Viswanatha Iyer, Anusham, 26/2036, Tutor's Lane, Trivandrum.

5. Yohannan, C.M. *A comparative study of the short stories of Yaspal and Kesavadev.* Kerala. Dr. V.P. Mohammed Kunju Metharu, Reader, Department of Hindi, Institute of Correspondence Courses, University of Kerala, Trivandrum.

Malayalam

1. Leela Bai, N. *A literary study of Ramacharitam in relation to Valmiki Ramayanam and Kampa Ramayanam.* Kerala. Dr. N. Mukundan, Lecturer, Department of Malayalam, University of Kerala, Kariavattom.

Linguistics

1. Malini, S. *Compositions of Sri. Swathithirunal : A structural study*. Kerala. Prof. Somasekharan Nair, Editor, Department of Linguistics, University of Kerala, Trivandrum.

History

1. Varghese George. *Socio-economic life of Syrian Christians in Kerala from 1959 A.D. to 1947 A.D.* Kerala. Dr. M O. Koshy, Prof., Christian College, Chengannur.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Sachdeva, Darshan Lal. *Use of periodicals in economics, political science and sociology in the libraries of Aligarh, Banaras, Delhi and Jawaharlal Nehru Universities* Delhi.

Psychology

1. Agarwal, Alka. *An attitudinal study of some social problems among degree college students of Rohilkhand Division of U.P.* Rohilkhand.

2. Bisht, R.S. *A study of creativity as a function of academic achievement, sex and socio-economic status among tribal and non-tribal students*. Kumaun. Dr. N. Hasnain.

3. Kant, Anita. *A psychological study of Delhi Transport Corporation (DTC) drivers in relation to road accidents*. Delhi.

4. Kharkwal, Meena Kumari. *Developmental of formal operational thought in Tharu and non Tharu boys*. Kumaun. Dr. N. Hasnain.

5. John, Annie. *A study of scholastic backwardness in a child guidance clinic*. Bangalore. Dr. (Mrs.) Malavika Kapur, Department of Clinical Psychology, National Institute of Mental Health and Neuro-Sciences, Bangalore.

6. Nabi, Sajida. *A study of personality correlates of creativity among adolescent students*. Aligarh. Prof. Afzal Qureshi, Reader, Department of Psychology, Aligarh Muslim University, Aligarh.

7. Nisonko, Sibram. *Appraisal of executive potentialities in a bank*. Baroda.

8. Rana, Arju. *A cross-cultural study of Indian and Nepalese managers : Job satisfaction in relation to managerial style, quality of working life, personality, locus of control and need satisfaction*. Panjab.

9. Rashid, Tabassum. *A study of biased components and evaluation of traits in self and other's perception : Populars, neglectees and isolates*. Aligarh. Dr. Qamar Hasan, Reader, Department of Psychology, Aligarh Muslim University, Aligarh.

10. Sitaram, Brinda. *Effectiveness of behavioural intervention in the management of chronic pain in Cancer patients*. Bangalore. Dr. Indira Jai Prakash, Reader, Department of Psychology, Bangalore University, Bangalore.

Sociology

1. Anantha Ram, S *Declining sex ratio in India, 1901-81*. JNU. Prof. M.K. Premi, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

2. Ashok, R. *Socio-cultural constraints on tribal education*. Calicut. Dr. G. Ramachandra Raj, Prof., Department of Sociology, University of Kerala, Trivandrum.

3. Baluni, Dinesh Chandra. *Garhwal mandal mein sewanivrit sainikon ka samajik samayojan : Ek samajshastriya adhyayan*. Rohilkhand. Dr. S.N. Kapoor, S.J. College, Najibabad.

4. Brara, Rita. *Kinship in a princely state*. Delhi.

5. Chatterji, Tapti. *Vimal Mitra ke upanyason mein nari kee paristhiti ka samajshastriya adhyayan*. Rohilkhand. Dr. R.K. Mukherjee, Bareilly College, Bareilly.

6. Goel, Suman. *Nagariya samajik parivesh mein balshramikon kee samasyaen ; Ek samajshastriya adhyayan*. Rohilkhand. Dr. N.L. Pandey, S.J. College, Najibabad.

7. Khasgiwala, Aruna Sunil. *A study of urban slum families : Social work perspective*. Baroda.

8. Mathew, Asha. *Institutional influence on female offenders : A study in Kerala*. Kerala. Dr. G. Narayana Pillay, Prof., Department of Sociology, University of Kerala, Kariavattom.

9. Nandakumar, P.T. *Victims of road accidents : A socio-legal study*. Kerala. Dr. R. Sankaradasan Thampi, Principal (Retd), Law College, Trivandrum and Dr P.K.B. Nayar, Prof. and Head, Department of Sociology, University of Kerala, Trivandrum.

10. Padma Kumari. K. *Social aspects af nutritional deficiencies : Special reference ta pre-school children*. Kerala. Dr. K. Madhavan Pillai, Assoc. Prof., Medical Sociology, Medical College, Trivandrum.

11. Sharma, Umesh Chandra. *Factions and factionalism in a rural community : A micro study of Datagunj in Budaun District, Uttar Pradesh*. Rohilkhand. Dr. A.K. Chatterjee, N.M.S.N. Dass College, Budaun.

12. Vrijendra Kumar. *Uttar Pradesh ke Rohilkhand mandal mein ek pichhde samudaya dhyara kajad ka samajshastriya adhyayan : Samajik parivartan ke vishesh sandarbh mein*. Rohilkhand. Dr. G.C. Kulshreshta N.M.S.N. Dass College, Budaun.

Political Science

1. Arora, Dolly. *The political economy of decision making in India*. Delhi.

2. Arun Kumar. *Bharat mein sansadiya visheshadhikar 1950 se*. Rohilkhand. Dr. Hemandra, N.M.S.N. Dass College, Budaun.

3. Bandyopadhyay, Ananta Kumar. *Justice and the Indian judiciary : Land reforms in West Bengal as a case study*. Burdwan. Prof. S.K. Roy, Department of Political Science, University of Burdwan, Burdwan.

4. Deepmala. *Harijan andolan : Kumaun kshetra ka ek adhyayan*. Kumaun. Dr. I.D. Mishra.

5. Gehlot, Narpat Singh. *Electoral administration in India, 1952 to present day. D. Litt.* Rohilkhand.

6. Jha, R.N. *Bharat Bhutan sambandh : 1947 se 1980 tak.* Kumaun, Dr. S.K. Jha, Prof., Department of Political Science, Kumaun University, Nainital.

7. Mahapatra, Srikant. *Socio-political culture of Kutia Kandha : A case study of resistance to modernization process in Phulbani District of Orissa.* Berhampur. Dr. B B. Jena, Ex. Prof., Professor Pada, Cuttack.

8. Palekar, Shivalingappa A. *Basaveshwara's concept of equality and an ideal society.* Gulbarga. Dr. Mallappa Amaravati, Prof. and Chairman, Department of Political Science, Gulbarga University, Gulbarga.

9. Rath, Rabindranath. *Political consciousness of Tribals : A case study of major tribals of Andaman and Nicobar Islands.* Berhampur. Dr Harihara Das, Prof., Department of Political Science, Berhampur University, Berhampur.

10. Reshma. *Soviet policy towards South Asia with special reference to Indo-Soviet relations 1965-82.* Aligarh. Dr. N.A. Kishore.

11. Sinha, Kiran. *Prachin Bharat mein rajdooton kee bhumika.* Ghasidas. Dr. R.N.P. Singh.

12. Syed Hasan Mamun. *Population planning in Bangladesh.* Calcutta.

13. Venkateswaran, Balla. *Kala Venkata Rao : A political study.* Andhra.

Economics

1. Babu Singh. *Study on rural cottage and small scale industries in relation to employment and income of the rural population in District Mirzapur, U.P.* C.S. Azad. Dr. D.S. Shukla, Assoc. Prof., Department of Agricultural Economics Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

2. Batabyal, Kajal Kumar. *Appraisal of a sugarcane based technology transfer programme.* Visva-Bharati. Dr. D. Dasgupta, Department of Agricultural Extension, Palli Siksha Bhavana, Visva Bharati, Sriniketan.

3. Bhatnagar, Anurag. *A study of land reform measures in Bareilly region.* Rohilkhand. Dr. M.P. Goswami, Bareilly College, Bareilly.

4. Bozorgzad, Ahmad Ali. *Development of agricultural sector in Iran since 1962.* Aligarh. Dr. Mohammad Yusuf, Reader, Department of Economics, Aligarh Muslim University, Aligarh.

5. Garg, Anand Prasad. *Kumaun kshetra ke tarai bhag ke arthik vikas mein gobar gas kaa mahattva evam sambhavnayen.* Kumaun. Dr. Harshvardhan.

6. Gupta, Sadhana. *Foreign aid and agricultural development in India since 1951.* Kumaun. Dr. D N. Agrawal.

7. Mehta, G S. *Education, employment and earnings : A study on the role of education in equalisation of economic opportunity.* Kumaun. Dr. T.S. Papola.

8. Pandey, M.C. *Input.output study of selected agricultural enterprises in Kumaun with special reference to potatos cultivation and its role in income and employment generation.* Kumaun. Dr. G.C. Pandey.

9. Pandey, Rajnish. *Problems of industrial labour in hill regions of Kumaun.* Kumaun. Dr. P.C. Pandey.

10. Pendse, Neelkanth Gajanan. *Changes in the productivity levels in major crops of Madhya Pradesh since 1956.* Durgawati. Dr. Manohar Pandit, Department of Economics, Rani Durgawati Vishwavidyalaya, Jabalpur.

11. Ram Charan. *A study on the effectiveness of the farmers' training centres in Uttar Pradesh.* C.S. Azad. Dr. J P Yadav, Prof, and Head, Department of Agricultural Extension, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

12. Sharda, Harkishandas Madanlalji. *An impact evaluation study on Integrated Rural Development Programme in a tribal block in Bastar District.* Barkatullah. Dr. A.C. Minocha, Director, Collegiate Development Council, Barkatullah Vishwavidyalaya, Bhopal.

13. Singh, Anil Kumar. *Pattern of income, savings and economic rationale of investments in agriculture in District Ghazipur of Eastern U.P.* C.S. Azad. Dr. R.I. Singh, Prof. and Head, Department of Agricultural Economics, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

14. Tripathy, Prasanna Kumar. *Nature and character of development of Orissa's agriculture : A case study of one Orissa Village.* Sambalpur. Sri R.S. Rao, Reader, P.G. Department of Economics, Sambalpur University, Burla.

15. Yazdani, Mohammad. *Effectiveness of television in dissemination of agricultural information.* C.S. Azad. Dr. S.N. Tripathi, Asstt. Prof., Department of Agricultural Extension, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

Law

1. Kang, Ranbir Kaur. *Trade unionism and industrial relations law in India.* Panjab.

Military Science

1. Tejvir Singh. *Prospects of Soviet power in the 1980's.* Rohilkhand. Dr. B.K. Tandon, Bareilly College, Bareilly.

2 Virinder Singh. *Working of diarchy in the Punjab.* Punjabi. Col. Surinder Singh, Department of Defence Studies, Punjabi University, Patiala.

Education

1. Kohli, Om Prakash. *A study of attitude of students towards religion in relation to personality characteristics, intelligence and socio-economic status.* Panjab.

2. Pandit, Bansilal. *Identification and measurement of chemistry laboratory skills of senior secondary schools students of Delhi.* Baroda.

3. Punithambal, M. *A comparative study of correlates of academic achievement among disadvantaged and non-disadvantaged children at the terminal stage of primary schooling in Tamil Nadu.* Baroda.

4. Rawat, G.S. *A study of absenteeism in junior high school students in relation to school climate, social development, socio-economic states and academic achievement.* Kumaun. Dr. A.R. Bisht.

5. Rawther, Y. Shahul Hameed. *A comparative study of the aims of education at primary and secondary levels as perceived by different sections of the community.* Kerala. Dr. K. Sivadasan Pillai, Director, Centre for Adult Education and Extension, University of Kerala, Kariavattom.

6. Sistha, Rama. *An investigation into the effectiveness of guided discovery learning vis-a-vis the conventional approach to the teaching of scientific concepts in life sciences.* Jamia. Prof. Devendra Joshi, Head, Department of Teacher Training and Non-Formal Education and Dean, Faculty of Education, Jamia Millia Islamia, New Delhi.

7. Yadav, Gajraj Singh. *An evaluation of prescribed English textbooks for degree classes in Haryana.* Kurukshetra.

Commerce

1. Bajpai, Tarun Kumar. *Jabalpur jile mein krishi upaj mandiyon kaa vishleshnatmak adhyayan.* Durgawati. Dr. D.K. Sinha, G.S. College of Commerce and Economics. Jabalpur.

2. Dasrath Kumar. *Management of public debt in India during plan period.* Rohilkhand. Dr. S. Giri, Bareilly College, Bareilly.

3. Gupta, Om Prakash. *Workers' participation in management.* Delhi.

4. Jain, Vijaykumar Kaluram. *A study of tax incentives under direct tax laws and their impact on investment climate* Nagpur. Dr. K.R. Dixit, G.S. College of Commerce and Economics, Nagpur.

5. Kalia, Pamila. *Growth and development of entrepreneurship : A case study of Faridabad industrial area.* Kumaun. Dr. N S. Bisht.

6. Kapoor, Prakash Narain. *Lead bank scheme in Kumaun division with special reference to Nainital District.* Kumaun. Dr. N.S. Rana.

7. Maheshwari, Narayan Prakash. *Industrial regionalisation in backward regions : A case study of Garhwal region (U P.)* Rohilkhand. Dr. H L. Sharma, Bareilly College, Bareilly.

8. Mian Jan. *Personnel management in U.P. state : A case study of Kashipur Unit.* Kumaun. Dr. R.M. Saksena.

9. Mital, Abhai Kumar. *Management of funds by non-nationalised commercial banks in India : A case study of scheduled commercial banks during post nationalisation period.* Rohilkhand. Dr. H L. Sharma, Bareilly College, Bareilly.

10 Pant, Hem Raj. *Role of small scale industries in Nepal : A study of the far western development region.* Kumaun. Dr. J.C. Tewari.

11. Sharma, Chandra Shekhar. *A study of the relationship between trust factor and performance in organisational setting.* Delhi.

Home Science

1. Hallik, Sutapa. *Effect of toxic agents under malnourished condition.* Nagpur. Dr. I. Vaishwanar, Govt. Medical College, Nagpur.

2. Pande, Manisha. *A study of role analysis : Role enactment, role contentment and role constraints of home science college teachers.* Baroda.

3. Wasu, Sunanda Ashok. *A study of effectiveness of legislative protection for home makers as consumers : With special reference to purchasing practices of home makers.* Nagpur. Dr. (Mrs.) Asha Patwardhan, Department of Home Science, Nagpur University, Nagpur.

Management

1. Gupta, Suman. *Dimensions of corporate financial reporting.* Delhi.

2. Tuteja, Satish Kumar. *Structure of corporate management in India.* Delhi.

Most Important

Reference Book of the Year

Educational Technology : Yearbook 1988

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BANARAS HINDU UNIVERSITY

OFFICE OF THE REGISTRAR
(ACADEMIC)

ANNOUNCEMENT FOR ADMISSION FOR 1990-91

The University will hold ENTRANCE TESTS for admission to the following courses for the session 1990-91 at VARANASI, DELHI, HYDERABAD, MADRAS, RANCHI and CALCUTTA in June, 1990 (dates will be announced later). For 3-year Shastri (Hons) additional Centres will be PURI and GUWAHATI. The centre for the test in respect of admission to M.F.A., B.Mus., M Mus and B.P.Ed. courses shall be VARANASI only. The University reserves the right to cancel any of the centres except VARANASI.

Faculty/College	Course of Study	Eligibility conditions
1. Arts/ Social Sciences/ Mahila Mahavidyalaya (Girls only)	3-year B.A. (Hons.)*	Passed+2 (of 10+2 pattern) or equivalent examination with 45 per cent marks in aggregate.
2. Science/ Mahila Mahavidyalaya (Girls only)	3-year B.Sc. (Hons.)**	Passed+2 (of 10+2 pattern) or equivalent exam. with 45 per cent marks in Science subjects (Physics, Chemistry, Maths, and/or Biology) Candidates having studied Statistics or Geology along with a minimum of two other Science subjects are also eligible.
3. Commerce	3-Year B. Com. (Hons)*	Passed +2 (of 10+2 pattern) or equivalent exam. with Commerce or Economics or Maths. as a subject with 45 per cent marks in aggregate.
4. Sanskrit Vidya Dharma Vijnana	3-year Shastri (Hons)*	Passed Madhyama of B.H.U. or +2 (under 10+2 pattern) with 45 per cent marks in aggregate.
5. Arts	1-year B J.,** B.Lib. & Inf. Sc.** B.P. Ed.**	Graduate under 10+2+3 pattern with 50 per cent marks in aggregate or post-graduate with 50 per cent marks in aggregate. (Candidates passing B.Sc. (Ag.)/ MS.Sc. (Ag.) are not eligible)
	1-year M.J.	B.J. with 50 per cent marks in aggregate.
	1-year M.Lib. & Inf. Sc.	B.Lib. Sc. with 50 per cent marks in aggregate.
	1-year M.P.Ed.	B.P.Ed. with 50 per cent marks in Theory, Practice and Proficiency seperately.
	2-year M.A. (Museology)	M.A. in History/AIHC & Arch./ Sanskrit/History of Art or in allied subject with 50 per cent marks in the aggregate.
6. Education	1-year B.Ed*/ B.Ed. (Special)	Graduate under 10 + 2 + 3 pattern or M.A./M.Sc./M.Com. with 50% marks in aggregate (candidates passing Shastri/ Acharya/B Sc. (Ag)/+M.Sc. (Ag.) and blind are not eligible.
	1-year M.Ed. B.Ed.	Graduate under 10+2+3 pattern & B·Ed. (Spl.) or B.Ed./B.Ed. (Spl). with 50% marks in aggregate of theory with post-graduate degree.
7. Law	3-year LL.B.**	B.A. / B.Sc. / B.Com. under 10+2+3 pattern with 45% marks in aggregate or B.Tech /B.Sc. (Ag)/M.B.B.S.
	2-year LL.M.	3-year LL.B. with 50% marks in aggregate.

1	2	3
8. Performing Arts Note : Only single course students may be admitted to B. Mus. Course.	3-year B.Mus.	A. +2 of 10+2 pattern or an equivalent examination with (i) Vocal/Instrumental Music as one of the subject (ii) IIIrd year of 3 year Diploma in Vocal/Instrumental Music examination of this University or an equivalent examination. (iii) without offering Vocal/Instrumental Music as one of the subject provided the candidate have passed one of the examination mentioned in the Information Leaflet. B. B.A. (Hons) of 10+2+3 pattern in Vocal/Instrumental Music exam. of this University or an equivalent. obtaining 50% marks in Music practical, in each case.
	2-year M.Mus. Vocal/ Instrumental	(i) B. Mus. in Vocal/Instrumental Music exam. of this university or an equivalent exam. from a recognised university obtaining 55% marks in the practical. (ii) B.A. (Hons.) exam. (10+2+3 pattern) with/without Music of this university or an equivalent exam. from a recognised university provided the candidate(s) has also passed one of the examinations mentioned in the Information Leaflet obtaining 55% marks in practical.
	2-year M.Musicology	B.A. degree in general education with Music as a subject or B.A. in other subjects plus B.Mus. or equivalent exam. obtaining 55% marks in theory & practical both in Music.
9. Visual Arts	4-year B.F.A.*	Passed 10+2 or equivalent examination with 45 per cent marks in aggregate. Maximum age 22 years as on 31.7.1990.
	2-year M.F.A. Painting/ Applied Arts/Plastic Arts/ Pottery & Ceramics/ Textile Design	B.F.A. in the subject concerned under 10+2+4 or 10+5 pattern with 55% marks in aggregate.
10. Computer Centre	1-year P.G -D.C.S.A.	(a) B.Sc. under 10+2+3 pattern with 45% marks in aggregate or M.Sc. with 45% marks. (b) Candidates must have offered Physics and Mathematics in I.Sc/+2/equivalent exam.
RESERVATION (for all courses)	15% and 7.5% seats are reserved for SC/ST candidates respectively, 3% seats for Orthopaedically Handicapped candidates provided they qualify in the test.	

* Only pass marks are required in case of SC/ST candidates.

**Only 40 per cent marks are required in case of SC/ST candidates.

Detailed information about the Test, subject available for Honours/Combinations, etc. is given in the INFORMATION LEAFLET.

Cost of Forms and Test Fee :

Rs. 10/- per set of application form along with Information Leaflet. Application forms can be obtained either personally from the Office of the respective Deans of Faculties or Principal of College concerned or Co-ordinator, Computer Centre (D.C.S.A. course) or through post by sending request along with crossed postal order for Rs. 18/- (including postal charges) to the respective Deans of Faculties/Principal of the College/Co-ordinator, Computor Centre (D.C.S.A. course) payable at Malviya Nagar Post Office, BHU, Varanasi-221005 along with a self-addressed envelope of the size 28 × 20 cm. The course to which admission is sought must be clearly stated. Examination fee in each case shall be Rs. 40/- (Rs. 10/- for SC/ST and for the Sanskrit Vidya Dharma Vijnana Sankaya). Applicants from Varanasi Municipal Corporation are required to deposit their examination fee through 'bankers cheque' from any of the nationalised bank.

Applications duly completed and accompanied by all the relevant mark-sheets, certificates, caste certificate and crossed Bank Draft/Banker's cheque towards Examination Fee in favour of Registrar, Banaras Hindu University, Varanasi-221005 on or before 9th April, 1990. No application shall be accepted after the last date.

Candidates who are appearing in their respective qualifying examinations prescribed for admission to a particular course are also eligible to appear in the University Entrance Test, as per conditions laid down in this regard and mentioned in Booklet. Candidates are required to purchase a seperate form for each course.

Admission of Foreign Nationals : All the FOREIGN NATIONALS, other than sponsored by the Government of India, are required to fill up the form to appear in the Test, if they are otherwise eligible.

Date of Issue of Application forms : Thursday, 22nd February, 1990
Last date for postal request for forms : Saturday, 24th March, 1990
Last date for sale of forms from counter : Thursday, 5th April, 1990
Last date for receipt of completed application forms : Monday, 9th April, 1990

REGISTRAR

BIRLA INSTITUTE OF TECHNOLOGY

MESRA : RANCHI

(A Deemed to be University)

ADMISSIONS NOTIFICATION--1990

Applications are invited for admission to the following post-graduate Degree Programmes for the academic session 1990-91.

(i) M.B.A.—(Master of Business Administration)
  2—Yr. Full-time Course and 3-Yr. Part-time course.
(ii) M.C.A.—(Master of Computer Applications)
  3—Yr. Full-time course and 4½ Yr. Part-time course.
(iii) D.C.A.—(Diploma in Computer Applications)
  1—Yr. Full-time course and 1½ Yr. Part-time course.

Admissions will be made through an Entrance Examination which will be held on Saturday, May 26, 1990 at 1.00 p.m. to 2.00 p.m. for D.C.A. and on Sunday, May 27, 1990 at 9.00 a.m. to 11.00 a.m. for MBA & 1.00 p.m. to 3.00 p.m. for MCA at the following Centres :

Agra, Ahmedabad, Allahabad, Bangalore, Bareilly, Bhagalpur, Bhopal, Bhubaneshwar, Bombay, Calcutta, Chandigarh, Dehradun, Delhi, Gauhati, Gaya, Ghaziabad, Gorakhpur, Hyderabad, Jaipur, Jamshedpur, Lucknow, Madras, Muzaffarpur, Patna, Ranchi, Sindri, Trivandrum, Varanasi, and Vijayawada.

Eligibility

(i) For M.B.A. (2-Yr. Full-Time) Course : University Degree (3-Yr. Course in 10+2+3 System) with atleast 50% aggregate marks in Arts/Science/Commerce and 60% Marks for graduate in Engineering/Technology/Agriculture.
(ii) For M.B.A. (3-Yr. Part-Time) Course : Same as of (i) above and further the candidate must have three years experience in supervisory capacity in any firm or organisation of repute.
(iii) For M.C.A. (3-Yr. Full-Time) Course : University Degree (3-Yr. course in 10+2+3 system) with atleast 50% aggregate marks, with Maths./Statistics as one of the subjects at the Degree level.
(iv) For M.C.A. (4½-Yr. Part-Time) Course : Same as of (iii) above, and further the candidate must have three years experience as executive in any firm or organisation of repute.
(v) For D.C.A. (1 Yr. Full-Time) Course : University Degree with atleast 50% aggregate marks with Mathematics/Statistics as one of the subject at Intermediate level.
(vi) For D.C.A. (1½ Yr. Part-Time) Course : Same as of (v) and further the candidate must have one year experience in any firm or organization of repute.

22½% seats are reserved for SC/ST candidates.

Those appearing at the various qualifying examinations are eligible. The selected candidates will, however, be required to produce the qualifying examination result by the end of September 1990.

Application Forms can be obtained by post on non-refundable pre-payment of Rs 25/- only by crossed postal order, payable to the Registrar, Birla Institute of Technology, Mesra, Ranchi. The request should accompany a self-addressed envelope of size 26 x 12 cm. affixed with postage stamps of Rs. 1.80 paise clearly mentioning the form required i.e. MBA, MCA or DCA as the case may be.

The last date for receipt of completed application form is April 10, 1990.

G.C. Singh
CO-ORDINATOR ENTRANCE EXAMINATION & O.S.D.

CLASSIFIED ADVERTISEMENTS

THE UNIVERSITY OF BURDWAN

RAJBATI : BURDWAN
WEST BENGAL

Advertisement No. 10/89-90
Dated : February 12, 1990

Applications in the prescribed form are invited for the following posts in the approved scales of pay (Professorship: Rs. 4500-150-5700-200-7300/-; Readership : Rs. 7300-125-4950-150-5700/-; Lectureship : Rs. 2200-75-2800-100-4000/-) PLUS dearness and other admissible allowances and pensionary benefits according to the University Rules.

(A) Professorship in Commerce	... One post
(B) Professorship in Economics	... One post
(C) Readership in Bengali	... Two posts
(D) Lectureship in Geography	... One post
(E) Lectureship in Economics	... One post
(F) Lectureship in Political Science	... One post (Lien Bound)
(G) Part-time Reader (Deputy Director) for Academic Staff College	... One post
(H) Part-time Lecturer (Assistant Director) for Academic Staff College	... One post
(I) Part-time Lectureship in Economics	... One post
(J) Part-time Lectureship in Statistics	... One post
(K) Part-time Lectureship in Commerce	...Three posts

Monthly Honorarium

For Part-time Lectureships : Rs. 150/- per month plus conveyance allowances as admissible under the Rules of the University.

For posts indicated at 'G' & 'H' : Rs. 500/- per month (Fixed)

Minimum Qualifications

For Professorships

An eminent scholor with published work of high quality actively engaged in research. About ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

Or

An outstanding scholar with established reputation who has made significant contribution to knowledge.

For Readership

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

At least five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding record of Teaching/Research.

For Lectureships

(a) A Doctor's Degree or research work of an equally high standard; and

(b) Good academic record with at least Second Class (C in the seven point scale) Master's Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Having regards to the need for developing inter-disciplinary programmes. the degrees in (a) and (b) above may be in relevant subjects;

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record, (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increment until he fulfils these requirements.

For Part-time Lectureships

Same as Lectureship. Omit last paragraph.

Desirable Qualifications for posts indicated at 'G' & 'H'

"Ability / Experience to organise Seminar/Symposium/Workshop at the national/regional level".

Specialisation or Proficiency

For posts indicated at 'A', 'B', 'F', 'G', 'H' & 'J'
... Any Branch of the Subject
For posts indicated at 'C'
... First post —Modern Bengali Literature
Second post—Any Branch of the Subject
For post indicated at 'D'
... Social/Economic Geography
For post indicated at 'E'
... International Trade
For post indicated at 'I'
... Statistics and Econometrics
For posts indicated at 'K'
... First post —Business Statistics
Second post—General and Marketing Management
Third post—Labour and Industrial Laws

Those who applied earlier in response to Advertisement No. 4/89-90 dated 24.7.89 for the posts indicated at 'B', 'C'. 'D', & 'E' and Advertisement No. 8/89-90 dated 4.10.89 for the posts indicated at 'I' & 'J' need not apply afresh.

The choice of the Selection Committee may not necessarily be confined to those who apply formally.

Prescribed application forms may be obtained from the Office of the Registrar, University of Burdwan personally on payment of Rs. 10/- in Cash at the University Sales Counter from 11 a m. to 12 noon on Saturday and 11 a.m. to 1-30 p.m. on other working days or by sending a self-addressed stamped (Re. 1/-) envelope (11" x 5") accompained by Crossed Indian Postal Order of Rs. 10/- in favour of the Finance Officer, University of Burdwan.

Last date for submission of application with requisite fee of Rs.5/- is March 15, 1990.

M. Chatterjee
REGISTRAR

UNIVERSITY OF LUCKNOW

Advertisement No. 1/990

WANTED

Professors (Rs. 4500-150-5700-200-7300) :

1. One in Public Administration
2. One in Zoology

Readers (Rs. 3700-125-4050-150-5700) :

3. One in Urdu
4. One in Public Administration
5. One in Hindi
6. One in Chemistry
7. One in Physics
8. One in Astronomy

Lecturers (Rs. 2200-75-2800-100-4000) :

9. One in Political Science
10. One in Linguistics
11. One in Tamil
12. One in Section of Oriental Studies in Arabic & Persian
13. One in Hindi
14. One in Business Administration

Minimum Qualifications for Professors :

Eminent scholarship with published work of high quality and active engagement in research and ten years' experience of teaching or research and experience of guiding research at doctorate level;

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

Minimum Qualifications for Readers :

(a) Good academic record with a doctorate degree or equivalent published work and active engagement in research or innovation in teaching methods or production of teaching materials; and

(b) Five years' experience of teaching or research including at least three years as Lecturer or in an equivalent position.

Provided that the requirement contained in clause (b) may be relaxed in the case of candidate who in the opinion of the Selection Committee has outstanding research work to his credit.

Qualifications for Lecturers

As laid down in the Lucknow University First Statutes.

General

Benefits of Provident Fund/Pension available as admissible under the rules. Period of probation for permanent posts is one year. It is not necessary to fill any/all of the advertised posts.

Prescribed application form can be obtained, free of cost, by sending a self-addressed envelope size 23 x10 cm. with postage stamp worth Rs. 6/-, from the office of the Registrar. Last date for submission of applications, duly completed in all respects, with recent testimonials, publications etc. and a Bank Draft of Rs. 5/- drawn in favour of the Registrar, Lucknow University, Lucknow, payable at any Bank in Lucknow, is March 21, 1990. Applications without Bank Draft will not be accepted Candidates who are in service should send their applications through proper channel. Application Forms to outstation candidates will be sent upto March 14, 1990. Convassing will be disqualification.

R.D. Misra
REGISTRAR

MOHANLAL SUKHADIA UNIVERSITY
UDAIPUR

Advertisement No. 1/90 **Dated : February 13, 1990**

Application are invited on prescribed application form for the following posts. Application form alongwith details about qualifications etc. can be obtained from **Deputy Registrar (Recruitment), University Office, Udaipur-31300I on payment** of Rs. 10/- by cash/I.P.O. payable to Comptroller, Mohanlal Sukhadia University Udaipur-313001 alongwith a self-addressed envelope of 27 x 12 cms. with Postal Stamps affixed of Rs. 2.20. **Last Date for the receipt of completed application : March 31, 1990.**

Those who have already applied for these posts in response to our earlier advertisements should also apply afresh. Their earlier application will not be entertained.

Professor : Pay Scale ; Rs. 4500-150-5700-200-7300.

(i) Hindi—1 (ii) Political Science—1 (iii) Meera Chair (Rajasthani)—1 (iv) History—1 (v) Physics—1 (vi) Zoology—1.

Reader (Associate Professor) : Pay Scale : Rs. 3700-125-4950-150-5700.

(i) Rajasthani—1 (ii) Hindi—1 (iii) Physics—1 (iv) Accounts & Statistics—1 (v) Banking & Business Economics—1 (vi) Chemistry—1 (SC).

Lecturer (Assistant Professor) : Pay Scale : Rs. 2200-75-2800-100-4000.

(i) Political Science—2 (1 for SC) (ii) Hindi—2 (1 for SC) (iii) History—1 (iv) Economics—1 (v) Drawing & Painting—1 (vi) Law—1 (vii) Geography—3 (1 for SC & 1 for ST) (viii) Chemistry—4 (2 for SC & 1 for ST) (ix) Mathematics—1 (x) Zoology—2 (1 for SC) (xi) Physics—1 (SC) (xii) Botany—2 (1 for SC).

General Note

1. **For the post of Assistant Professors :** Candidates must have qualified the eligibility test for J.R.F./Lecturership conducted by U.G.C./C.S.I.R. or passed Ph.D./or M.Phil degree besides the minimum qualifications laid down by the University.
2. Number of posts may be increased or decreased.
3. The University reserves the right not to fill up post(s) advertised.
4. Applications received on plain paper or after last date will NOT be entertained.
5. Candidates already in service must apply through proper channel
6. In case SC/ST candidates are not available or not found suitable, the post can be filled in from General Category also.

REGISTRAR

ANNAMALAI UNIVERSITY

RAJAH MUTHIAH INSTITUTE OF HEALTH SCIENCES

(Non-grant Institution)

Notification No. 1(S)/90

Applications are invited in the pres-ribed form for the following posts in he Rajah Muthiah Medical College of his University :

l. No.	Name of the Post
1.	Professor/Reader / Lecturer in Anatomy
2.	Professor / Reader / Lecturer in Physiology
3.	Professor / Reader / Lecturer in Bio-Chemistry
4.	Professor / Reader / Lecturer in Pharmacology
5.	Professor / Reader / Lecturer in Pathology
6.	Professor / Reader / Lecturer in Microbiology
7.	Professor / Reader / Lecturer in Forensic Medicine
8.	Professor / Reader / Lecturer in Social and Preventive Medicine
9.	Professor / Reader / Lecturer in Medicine
10	Professor / Reader / Lecturer in Surgery
11.	Professor / Reader / Lecturer in Obstetrics and Gynaecology
12.	Professor / Reader / Lecturer in Paediatrics
13.	Professor / Reader / Lecturer in T.B. & Chest Diseases
14.	Professor / Reader / Lecturer in Venereology & S.T.D.
15.	Professor / Reader / Lecturer in Dermatology
16.	Professor / Reader / Lecturer in Orthopaedics
17.	Professor / Reader / Lecturer in E.N.T.
18.	Professor / Reader / Lecturer in Ophthalmology
19.	Professor / Reader / Lecturer in Psychiatry
20.	Professor / Reader / Lecturer in Radiology
21.	Professor / Reader / Lecturer in Anaesthesiology
22.	Professor/Lecturer in Physical Medicine & Rehabilitation
23.	Reader / Lecturer in Nuclear Medicine
24.	Lecturer in Rural Health Centre
25.	Lecturer in Urban Health Centre
26.	Lecturer-cum-Epidemiologist
27.	Lecturer in Casualty Medical Unit
28.	Antenatal Medical Officer-cum-Lecturer
29.	Maternity & Child Welfare Officer-cum-Lecturer

QUALIFICATIONS

Professor : Applicant should have 4 years of teaching experience as Reader in a Medical College, besides the prescribed educational qualifications.

Reader : Applicant should have 5 years of teaching experience as Lecturer in a Medical College, besides the prescribed educational qualifications.

Educational Qualifications

For Sl. No. 1 : M.S. (Anatomy)/ MBBS with M.Sc. (Anatomy)/Ph.D. (Medical Anatomy) / D.Sc. (Medical Anatomy)

For Sl. No. 2 : M.D. (Physiology)/ MBBS with M.Sc. (Physiology)/Ph.D. (Medical Physiology)/D.Sc. (Medical Physiology)

For Sl. No. 3 : M.D. (Bio-Chemistry)/MBBS with M.Sc. (Medical Bio-Chemistry)/Ph.D. (Medical Bio-Chemistry)/D.Sc. (Medical Bio-Chemistry).

For Sl. No. 4 : M.D. (Pharmacology)/ M.D. (Pharmacology & Therapeutics)/ MBBS with M.Sc. (Pharmacology)/Ph. D. (Medical Pharmacology) / D.Sc. (Medical Pharmacology)

For Sl. No. 5 : M D. (Pathology)/ M.D. (Pathology & Bacteriology)/M.D. (Pathology with Bacteriology)/Ph.D. (Pathology)/D.Sc. (Pathology)

For Sl. No. 6 : M.D. (Bacteriology)/ M.D. (Microbiology)/M.D. (Bacteriology with Pathology)/M.D. (Pathology & Bacteriology)/ MBBS with M.Sc. (Medical Microbiology)/Ph.D (Medical Bacteriology)/Ph.D. (Medical Microbiology)/D Sc. (Medical Bacteriology)/ D.Sc. (Medical Microbiology)

For Sl. No. 7 : M.D. (Forensic Medicine)

For Sl. No. 8 : M.D. (Social and Preventive Medicine) / (Community Medicine)/M.D. (Medicine) with D.P.H.

For Sl. No. 9 : M.D. (Medicine)/ M.D. (General Medicine)

For Sl. No. 10 : M.S. (Surgery)/ M.S .(General Surgery)

For Sl. No. 11 : M.D. (Obstetrics & Gynaecology)/ M.S. (Obstetrics and Gynaecology)/M.D. (Mid. & Gynaecology)/M.S. (Mid. & Gynaecology)/ M.O.

For Sl. No. 12 : M.D. (Paediatrics)

For Sl. No. 13 : M.D. (Tuberculosis)/ M.D. in Medicine with T.D.D., D.T.D . or D.T.C.D.

For Sl. No. 14 : M.D. (Venereology)/ M.D. (Dermatology & Venereology)/ M.D. (Medicine) with Diploma in Venereology

For Sl. No. 15 : M.D. (Dermatology)/ M.D. (Dermatology & Venereology)/ M.D. (Medicine) with Diploma in Dermatology

For Sl. No. 16 : M.S. (Orthopaedics)/ M Ch. (Orthopaedics)

For Sl. No. 17 : M.S. (Oto-Rhino-Laryngology)

For Sl. No. 18 : M.S. (Ophthalmology)/M.D. (Ophthalmology)

For Sl. No. 19 : M.D. (Psychiatry)/ M.D. (Psychological Medicine)/M.D. in Medicine with Diploma in Psychological Medicine.

For Sl. No. 20 : M.D./M.S. (Radiology)

For Sl. No. 21 : M.D. (Anaesthesiology)/M.S. (Anaesthesiology)

For Sl. No. 22 : M.S. in General Surgery/M.S. (Orthopaedics) with two years special training in the speciality of Physical Medicine and Rehabilitation (Rehabilitation Medicine) or two years of equivalent training approved in the subject in any approved Institution in India.

For Sl. No. 23 : M.D. (Nuclear Medicine)/M D. (Radio-Therapy)/M.D. in Medicine with DRM or two years special training in Nuclear Medicine.

For Sl. Nos. 24 to 26 : M.D. (Social & Preventive Medicine)/Community Medicine)/M.D. (Medicine with D.P.H.)

For Sl. No. 27 : M.B B.S. with M.D./ M.S.

For Sl. No. 28 : MBBS with D.G.O. (Desirable : 2 years experience in Maternity Hospital)

For Sl. No. 29 : MBBS with D.C.H. (Desirable : 1 year experience in a Neonatal Unit or Childrens' Hospital)

Scale of Pay

Professor	:	Rs. 4500-150-5700-200-7300 with admissible allowances
Reader	:	Rs. 3700-125-4950-150-5700 with admissible allowances
Lecturer	:	Rs. 2200-75-2800-100-4000 with admissible allowances

Candidates, if selected, should serve for a specified period.

Higher start will be considered keeping in view long experience, special qualifications etc.

Candidates invited for interview for the posts of Professors and Readers will be paid a single second class to and fro railway fare.

Those who are in service should route their applications through proper channel.

Application forms can be had from the undersigned on payment of Rs. 10/- by cash/Money Order/Postal Order (Not refundable). Filled in applications (with 5 additional copies) should reach the undersigned on or before 8-3-'90.

Ag. REGISTRAR

INSTITUTE FOR PLASMA RESEARCH

(An Autonomous Institute of Dept. of Science & Technology)

GOVERNMENT OF INDIA

Near Indira Bridge, Gandhinagar Highway
BHAT, GANDHINAGAR-382 424

ADVT. NO. 02/90

The Institute for Plasma Research invites applications from young, bright and motivated candidates for the following research programmes.

I. PH.D. PROGRAMME

II. SHORT TERM RESEARCH PROGRAMME

This Institute conducts research in plasma physics, free electron lasers, relativistic electron beams, non-linear dynamics, chaos and physics of solid surfaces. This research programme provides exciting opportunities and excellent facilities to work on high technology areas such as high power lasers, spectroscopy (visible, ultra violet, x-ray and mm-wave); laser induced fluorescence; bolometry; x-ray tomography; nuclear detection techniques; interferometry; high-current, high-voltage pulsed power systems, sophisticated data acquisition system, sophisticated computer codes and numerical simulation.

PH.D. PROGRAMME

Candidates with M.Sc. in Physics/Applied Physics and those appearing in the final examination are also eligible to apply. Selection will be on the basis of personal interview and written test at the Institute and the travel expenses for the same by second class to & fro rail fare by shortest route will be provided. The selected candidates will undergo prescribed course work, mainly during the first year. The scholarship is Rs. 1800/- p.m. during the first two years. Subject to evaluation it may be increased to Rs. 2100/- p.m. in the next three years. Normally the Ph.D. programme is for 5 years and on its successful completion deserving candidates may be offered regular positions in the Institute. Deadline for applications is **April 10, 1990.**

SUMMER PROGRAMME

Students of M.Sc. (Physics) who are now in their first year of study are eligible to apply for this programme. Selected candidates will be provided the opportunity to interact actively with scientists of IPR in the frontier research areas of Plasma Physics for six weeks from May 21-June 29, 1990. The participants will receive a consolidated stipend of Rs. 1000/-, to & fro second class rail fare by shortest route and free hostel accommodation. Deadline for applications is **April 10, 1990.**

Applications for these programmes should include a detailed resume specifying name, date of birth, address (present and permanent), academic record (School leaving record, B.Sc., M.Sc. with percentage of marks, rank in the university, subjects taken and the name of the university/institution). Those who have passed UGC/CSIR qualifying examination should mention the same in their application. Candidates applying for Short Term Summer Programme must attach two letters of reference from their teachers. Applications should be sent to the Chief Administrative Officer at the above address superscribing the envelope the Advt. No. and the programme applied for.

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University News

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Inter-University National Youth Festival 1990

BANARAS HINDU UNIVERSITY

BHU Contingent that won the Overall Championship 1990

JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

ANNOUNCEMENT FOR ADMISSION—1990-91

The University will hold Entrance Examination for admission to various programmes of study in the following 24 Centres on May 17, 18 and 19, 1990 :

Ahmedabad, Bangalore, Baroda, Bhubaneshwar, Bombay, Calcutta, Chandigarh, Cochin, Dehradun, Delhi, Gauhati, Hyderabad, Indore, Jaipur, Lucknow, Madras, Madurai, Patna, Pune, Ranchi, Shillong, Srinagar, Varanasi and Vijayawada.

SCHOOLS AND PROGRAMMES OF STUDY

1. School of International Studies : (i) M.Phil/Ph.D. in International Politics, Organisation, Disarmament & Political Geography: Diplomatic Studies, International Legal Studies, International Trade and Development; South Asian, Central Asian, Southeast Asian & Southwest Pacific Studies; Chinese, Japanese and Korean Studies: West Asian, North African and Sub Saharan African Studies; American, Latin American & West European Studies and Soviet & East European Studies.

(ii) M.A. in Politics (International Studies)

II. Shool of Languages : (i) M.Phil/Ph.D. in French, German, Russian, Hindi, Linguistics & English, Spanish and Urdu and Ph.D. in Japanese, Chinese, Persian and Modern Western Philosophy.

(ii) M.A. in English, Linguistics, Hindi, Urdu, Persian, Arabic, Chinese, Japanese, French, German, Russian and Spanish.

(iii) B.A. (Honours) in Persian, Modern Arabic, Chinese, Japanese, French, German, Russian and Spanish (with entry points both in 1st and 2nd year). Students successfully completing the 3-year B.A. (Hons.) become eligible to seek registration to M.A. in the respective language as at (ii above.

III. School of Social Sciences : (i) M.Phil/Ph.D. programme is offered by following Centres which have their curricular and research work organised on interdisciplinary basis with a focus on some major problems of study Centres. Economic Studies and Planning, Historical Studies, Political Studies, Regional Development, Social Systems, Educational Studies (Psychology, Sociology, Economics and History of Education) and Social Medicine & Community Health.

(ii) Master of Community Health (MCH/Ph.D.) : Candidates holding MBBS with one year's experience after internship or Master's degree in Nursing with one year's experience in Community Health in Nursing.

(iii) M.A. in Economics, Geography, History, Political Science & Sociology.

IV. School of Life Sciences : (i) M.Phil/Ph.D. in areas of interdisciplinary research : Genetic Engineering, Molecular Biology and Genetics, Biochemistry, Plant and Animal Tissue Culture, Developmental Biology, Cell Biology, Immunobiology, Neurobiology, Microbiology, Radiation and Cancer Biology, Biophysics, Photobiology, Bioenergetic etc.

(ii) M.Sc. in Life Sciences : Open to candidates from both Biological and Physical Sciences.

V. School of Environmental Sciences : (i) M.Phil/Ph.D. in interdisciplinary areas of environmental concern with application of Biological and Allied Sciences, Chemistry Geology and Physics.

(ii) M.Sc. in Environmental Sciences : Interdisciplinary course with Atmospheric, Biological and Earth Sciences and Pollution Studies

VI. School of Computer & Systems Sciences : (i) M.Tech, M.Phil/Ph.D. : The School offers academic programmes leading to the degrees in diverse aspects of Computer & Systems Sciences

(ii) Master of Computer Applications (MCA) 3-year programme

VII. School of Physical Sciences : Ph.D. in Physical Sciences : Research and teaching in border line areas of Physics & Chemistry, the emphasis for the present being on topics of Chemical Physics, Condensed Matter Physics. Non-equilibrium Statistical Mechanics, Stochastic Processes & Nonlinear Dynamics, Experimental areas include magnetism Nonlinear optics and Light Scattering.

VIII. Centre for Biotechnology : Ph.D. Research areas : Cholera, Genetics and Vaccines, Photosynthesis, Eukaryotic Gene Expression and Synthetic Oligonucleofides in diagnostics and protein engineering.

Reservation of Seats : 22-1/2% (15% for SC and 7-1/2% for ST) and 3% seats are reserved for SC/ST and Physically Handicapped candidates SC/ST and Physically Handicapped candidates passing the qualifying examination are eligible to apply irrespective of their percentage of marks.

HOW TO APPLY

Application Form together with detailed Instructions including eligibility conditions can be had either personally on cash payment of Rs. 6/- per set or by post by sending crossed Indian Portal Order for Rs. 20.00 payable to Jawaharlal Nehru University, New Delhi for one set of forms and postage alongwith a self-addressed unstamped envelope of 28 cms, x 20 cms. size to the Deputy Registrar (Admissions), Jawaharlal Nehru University, New Delhi-110067. Additional application form can be had for Re. 1/- each. Those requiring more than one form may add Re. 1/- for each extra form.

There being different forms and Instructions Booklet for different levels of programmes, candidate should clearly indicate in the request as well as on the top of the self-addressed envelope the name of the programme for which the form and Instructions Booklet is required. A candidate can apply for more than one programme by filling up separate application form for each programme.

Issue of Forms : From February 12, 1990 to March 30, 1990.

Last Date for Receiving Completed Forms : April 6, 1990.

Note : 1. Candidates who are due to appear in the respective qualifying examination prescribed for eligibility for admission to a particular programme are also eligible to sit in the entrance examination as per conditions laid down in this regard. However, in the event of selection their admission shall be subject to their securing the prescribed percentage of marks in the qualifying examination and submission of all documents including final marksheet of the qualifying examination.

2. Announcement for admissions to Direct Ph.D. and Part-Time programmes will be notified separately in May, 1990.

10 JUL 1990

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Editor

NEHRU AND LITERACY

Vidyapati*

It was vivid to Pandit Jawaharlal Nehru that India by and large, meant illiterate peasants and labour. During the course of freedom movement and also later while marching on the road to development he strove hard to reach the toiling masses so as to obtain their participation and involvement in building a new India. As he did so, he observed that "one problem runs into another and all together form that vast complex that is India". He noticed that illiteracy constituted a big stumbling block in the way of progress. A practical democrat, that he was, the stupendousness of the task made him remark, "the problem before us is ultimately to change the thinking and activities of hundreds of millions of people, and to do this democratically by their consent." He believed that to maintain a democracy, a never ending process of democratization must be organised. He also appreciated that for a variety of reasons education was a significant element in the process and that literacy was a necessary tool of education.

True to the ideals of democracy, he valued the individual and perceived that "even that care of the individual must be considered in terms of the mass of the people or else the enlightended individual will be submerged in the unenlightened mass." He returned again and again to the theme of democracy, especially after independence. In this connection one cannot fail to mark one of his most telling and bold actions, whereby he was instrumental in getting universal suffrage to the hundreds of millions of India's illiterate citizens incorporated in our country's constitutional structures.

Not that Nehru was satisfied with a democracy of illiterate people. In fact, he was so much obsessed with the idea and urge for freedom that he could not think of postponing adult suffrage until literacy made a significant headway. He had great faith in the Indian people in whom "the urge to freedom, to independence has always been there," who "always honoured thought and the man of thought" and "who possessed some tremendous urge, or idea of significance of life, that was impressed upon the subconscious mind of India when she was fresh and young at the very dawn of her history" as he asserted in his 'Discovery of India'. With implicit faith in the traditional non-formal education of Indian masses he launched his experiment of making the biggest democracy of the world a success, and thereby embarked upon building an atmosphere in the country whereby the literacy effort and movement could meet with success.

Enamoured and committed to human rights, Nehru was alive to the right to education. In a way, 'right to read' was anticipated in his approach to the problems of India. "Every one has the right to read", and "Books are essential to Education" are the opening phrases of Articles 1 and 2 respectively of the "Charter for the Book" adopted on the eve of the International Book Year, 1972. This right reflects the basic concepts in the Universal Declaration of Human Rights adopted by the United Nations Organisation to whose ideals Nehru was devoted. The declaration implies that all human beings are born free and equal

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**Lecturer in Education, Govt. Mount Tiyi College,* in dignity and in rights. The rights guaranteed freedom of thought, opinion and expression. Thus the right to write, the right to publish and the right to read are among the inalienable rights of man according to Nehru.

Printing gave the written word a mass basis and with the printed word came the portable book. The latter, however, led to the new cult of individualism and non-involvement, which enabled the individuals to enjoy freedom in a certain way. But Nehru saw the need to enlarge the scope of freedom and ensure equality of opportunity for all Indians. As such, he adopted a strategy designed to reserve concrete opportunities in education and employment. He held that "not only must equal opportunities be given to all, but special opportunities for education. . . . .growth must be given to backward groups. . . . . He realised that the lot of deprived masses could not be improved until they were in a position to excercise their right to read, for it is reading that places the tools of progress in their hands. It may be pointed out that it is one thing to have rights and quite another to exercise them. Rights are abstract values, the stress has to be laid on concrete gains, benefits. Freedom needs the creation of opportunity enabling people to learn reading and thereby exercise their right.

The issue of concrete gains and creation of opportunity leads us to a consideration of the meaning of literacy—Literacy for what ? The International Consultative Liaison Committee for Literacy gave the following definition of literacy—"Literacy is not the simple reading of a word, of a set of associated symbols and sounds but an act of critical understanding of man's situation in the world."

The UNESCO document 'Learning to Be' by Faure et al. (1972) does not consider literacy to be "an end in itself", but "...a means of personal liberation and development and of extending individuals educational efforts.... . . (involving) over all interdisciplinary responses to concrete problems. . . . .Mass literacy campaigns are (thus) justified so long as they help the people participate in the changing of their environment."

Thus literacy is not the learning of the alphabet or the three R's. Learning the alphabet has meaning only in going beyond. It is conceived as a means for the emergence of learners as free human beings. According to Majid Rahnema, at one time Iranian Ambassador-at-large, "to become literate is to start the journey from primary to critical consciousness". He adds, "at the moment in which an individual breaks his silence and recognises his potentialities to act in the world as a free man, he ceases to be an illiterate regardless of his capacity to handle the three R's. The literate person is defined by his capability to read the world rather than word." It is in anticipation of this concept of literacy and illiteracy, it seems, that Nehru went headlong with his bid for universal suffrage.

Literacy, in essence, performs the function of transforming, constructing and restructuring experience. Thus there is a functionality of literacy. This functionality of literacy is quite comprehensive as to cover man's entire life. It relates to his work as farmer, landless labour, factory worker and as member of other occupations. It relates to his culture, customs, beliefs and values. It relates to the fight of the poor, his participation in politics and development work. In this way it is difficult to conceive of any non-functional, non-related literacy. Literacy is, therefore, a functional instrument helping man in his survival, in the solving of his problems and in achieving what is valuable in life and the world. As such, one is able to have the joy of literacy only when its functionality is perceived by him. And when it is perceived by him, he is right on the road to life-long learning.

Many of the literacy campaigns have failed in the past because they could not appreciate this functional aspect of literacy and orientate their programmes accordingly. A number of studies have concluded that lack of motivation on the part of learners was responsible for the flop of many a literacy campaign. No wonder, for in the absence of functionality how could the motivation be there. Nehru at the Avadi session of the Indian National Congress 1955, had the issue in mind when he raised the question, "After all you want to educate a person for something. What is it ?" Proposing a resolution on basic education, he answered ". . . .for a period of 7 years everybody in India, boy and girl,...must go through this course of basic training, which must provide an adequate background for following a profession or trade." He added, "we require an education for the purpose of achieving the national aims and social objectives of free India." By ensuring universal suffrage and by eliciting the involvement of the masses in the development work through community programme, Nehru brought the masses face to face with functionality of literacy, thereby sowing the seeds of motivation in them.

However, since the concept of functional literacy along with its implications, the strategy of building up motivation in this regard and the necessity of reinforcing it, among other things, through post literacy programs were not adequately appreciated by the administrators and others incharge of adult education program, the literacy effort could not register much success. As a result, even after forty two years of freedom, more than 60% population is illiterate. The success and failure of Nehru's regime in respect of eradication of illiteracy is reflected in the following paragraph in the report of the Education Commission (1966) :

"India was more illiterate in 1961 than in 1951 with an addition of about 36 million illiterates. In 1966 it has 20 million more illiterates than in 1961. This has happened despite unprecedented expansion of primary education and despite many literacy drives and programmes. Though the percentage of literacy has risen from 16.6 per cent in 1951 to 24 per cent in 1961 and 28.6 per cent in 1966, a faster growth of population has pushed the country further behind in its attempts to reach universal literacy. The moral is obvious : conventional methods of hastening literacy are of poor avail. If the trend is to be reversed, a massive unorthodox national effort is necessary."

It may be remarked that with Nehru as Prime Minister it was possible for the literacy effort to take the form of a mass movement and thereby offset many of the shortcomings of the conventional method. But Nehru's priorities were otherwise. In the face of his anxiety to improve economic and ocial conditions of the masses, industrialisation ommanded his prime attention. He considered ndustrialisation to be an important instrument for reedom. He insisted that India must be economically well off if the country was to be truly free and not ust nominally independent. He argued that only hrough rapid industrialisation could India become elf reliant and assure its continued autonomy, ndependence and equality of opportunity.

However, Nehru also perceived that for all of the modernisation and industrialisation in India, the conomy clearly lagged behind its ability to reward merit. And as this perception got pronounced he ot more and more involved with issues of industrialisation and with measures to increase the Gross National Product (GNP). But the revolution of rising xpectations resulted in a surplus of educated young eople who entered a world of work whose economic rowth was slow. All this pushed the priority of the radication of illiteracy at the level of government more and more backward.

It is ironical enough to note that Nehru, who on the eve of independence had concrete ideas about the role of government in tackling the problem of illiteracy, with passage of time gave the impression of making retreat from his deep concern on the issue, despite his vigour, stature, thought, and vision. The following message written by Nehru on 12.1.47 is very revealing.

"I send my good wishes to U.P. Education Expansion Department organising Literacy Week (June 15-19, 1947). The spread of literacy should be one of our principal concerns. In Mexico every literate from the president downward was compelled by law to make at least two others literate. The result of this was the rapid spread of literacy. I think we should also think of some method similar to this."

Although Nehru did not take any initiative so that some such method could be adopted, his concern for literacy took diverse forms. He emphasised the need to open out the avenues of knowledge and communication to vast number of people by promoting the production of cheap and suitable books written in a language which large number of people could follow. Speaking on the occasion of presenting State Awards for Excellence in Printing and Designing of Books and Publications, New Delhi on Dec. 19, 1958 he said, "I suggest for the consideration of the writers essentially and also of others like the publishing trade if books are to go far, they have to be cheap. Books can be cheap only if they have large circulations. Books will have large circulation only if they are written in a style which can be understood by large number of people. One step should lead to the other." This shows how anxious he was to see literacy spread and reading public expand. Nehru once remarked to Norman Cousins that educating India's masses was the most revolutionary step he could take because no one could know what newly literate and educated millions would portend.

As mentioned in Kothari Commission's report that we need a massive and unorthodox national effort, it is gratifying to note that now we have Mass Programme for Functional Literacy and National Literacy Mission. Let us hope that the literacy as a process of conscientization which Nehru had in his mind would not be lost sight of. After all, reading and writing constitute a unique technology in communication. In its wake, some changes in social behaviour and in attitude. Concerned not only with the communicating of thoughts, ideas and informations it creates a new way of life, a new kind of man — a thinking man. Such men work to recreate the world which they inherited. This vision of Nehru has to be realised. ☐

Audio-Visual Aids in Education and Research

R.S. Pareek*

Education is a process of transferring the message of knowledge alongwith its understanding within a classroom or to a target group located at a distance. A teacher can do this only by interacting with the group to be educated. There are words, pictures, gestures and postures through which the message can be transmitted and knowledge disseminated. A message can be communicated to a mass audience by many media. The only thing that is required of a teacher is to transform his acquired or experienced knowledge in a language so as to organise the message.

The ancient media is the printed text with words and pictures which communicate the message through a sense of 'Sight' only. Radio on other hand, is one of the mass media which communicates message through the sense of 'Sound' only. But video films projected through television combine both the visual and auditory characteristics. It is a very strong tool of teaching technology which has helped a lot in augmenting the skills of teaching. An American author James S. Kinder has aptly remarked, 'Television has literally captured the country. Its expansion has been much more dramatic than that of radio or the automobiles. It has become an important part of our way of life, so much so that it is difficult to say whether it is a luxury or necessity'.

Educational Technology in India

Experimental and educational television in India was initially put to use at the initiative of UNESCO in 1956. In its General Conference held in that year UNESCO signed an agreement with the All India Radio (AIR) to start Educational telecasting on 15th September, 1959. It was an experiment with the new medium as a vehicle of communication and education. To begin with, it's use was made for adult education and social welfare services as a pilot project. Later on it was extended for school going and college students in January—March 1960. Ford Foundation and University Grants Commission supported the venture.

The famous Satellite Instructional Television Experiment (SITE) was implemented during the year 1975-76. It was strongly felt that TV programmer under SITE may be related to education, agriculture, health, etc. During the sixth and seventh plans the expansion of educational telecasting made quick strides and the use of TV for educational persuits became popular. Within the plan period INSAT gave a boost to the developmental aspects of the educational television.

Educational television has been regarded, since then, as an integral part of the whole teaching learning process. It supplements 'The Speech' part of disseminating knowledge by making it more effective and meaningful. The role of the teacher in a classroom is still significant but he has to acquire and promote the new methods of delivery to become more relevant. It can also help overcome the difficulties such as lack of verbalising faced in the classes, while increasingly improving the quality of education.

Diversified Educational Technology (DET)

The teacher's involvement in a set up of traditional class is individualistic as he is always on a giving end. The receptivity of spoken words tend to be at its minimum when there is no support of demonstration. Video films may activise the recipients and the learning becomes a mutual process.

It is difficult to apply effectiveness criteria to a particular audio-visual aid. It should always be a part of integrated communication process or system. But in the context of education, there is a gradual acceptance of the learning process pyramid as suggested by Jogen Roed and depicted below :

Indirect
Learning
through
WORDS
(Reality Represented by
abstract symbols)

Indirect learning through
AUDIO—VISUAL AIDS
(Reality reproduced mechanically
e.g. TV., Black Boards, Models,
figures, Audio,

Direct Learning through
FIRST HAND EXPERIENCE
(Impact of reality on senses)
Lectures, inferences study trips,
Investigations, Research, Sampling, etc.

Associate Professor in Business Administration, University of Rajasthan, Jaipur 302 004.

The broader the base, the greater the learning impact.

Figure : **Learning Process Pyramid**

The learning pyramid reproduced above indicates that to make teaching effective the bases of transmitting messages have to be broad based so as to continue the listening, observing and experiencing aspects of the knowledge simultaneously. For that reason the teacher need to seek the help of words, mechanisms and first hand experience.

Experts on audio visual aids put forth the following arguments in favour of their use :

(i) Video adds motivation, thereby improving the teaching situation and making courses more effective.
(ii) Video is useful for capturing and storing complicated processes,
(iii) Simultaneous screening of action on the monitor is possible.
(iv) It encourages self confrontation.
(v) It's a useful form of teach-yourself system.
(vi) It activates the audience.

According to James W. Brown and others the following are somemore advantages of television :

(a) It is convenient and economical means of treaching the masses.
(b) It combines the best elements of radio with the potency of motion pictures.
(c) It is capable of helping to overcome learning barriers for many persons presenting important ideas, moulding attitudes, providing information in ways which demand neither verbal proficiency nor physical presence at the scene of action.
(d) It is a means of multiplying 'personal contacts' for outstanding TV instructions with audience all over the country of the world.
(e) It capabilizes upon immediacy, upon 'here and now' aspects of communication.

Apart from TV there are a wide range of other aids. These include Special Boards e.g. magnetic boards, Audio-cassette Recorder, Slide Projector, Overhead projector, Film projectors, and Computers.

Inspite of the utilities stated above educational television has raised more controversies, more doubts and misgivings than any other innovation in education. Research studies conducted report that attitudes of college student towards televised instruction are less favourable than those of high school students. Television instruction appears to have been most successful in mathematics, science and social studies and less successful in history, the humanities and literature. In view of the findings outlined above it would be appropriate to adopt the video films on a very selective basis. Since huge amount of expenditure is involved in providing sets and in preparing the films, their use in developing countries have to be examined thoroughly. In the absence of such an objective assessment of its feasibility there would be enormous wastage which these countries cannot afford. To increase the receptivity of video films the teachers need to be trained adequately before these are widely used in classrooms.

Audio/Projection

The application of audio/cassette recorder has made it possible to develop balanced combinations of expository text and affective audio which can be studied any where at any time. The presence of the teacher is not that necessary. In fact it encourages the concept of self-learning. It has the facility of replay either for emphasis or for repetition for analysis purposes. The power of audio lies in its arranged transactions and the pace at which one can learn better.

Overhead projectors and slide projectors are somewhat time saving devices. The use of board takes lot of time and limited information can be shared within a given time. The difficulty of speed may easily be overcome by having the transparencies prepared at leisure.

Computer Aided Instruction (CAI)

At first, the computer was actually regarded as a slightly sophisticated machine to be used for storing and displaying strategic information. However, over a period of time its use as a tool of tutoring was made by designing the lessons on computer. CAI is the developed stage of programmed instruction which was based on the drill and practice type of exercise. The computer structures the material for the learner and subsequently enables one to know his understanding through the system of feedback. Thus the learner has the added advantage of knowing the progress and accuracy of what is being learnt.

(*Continued on page 7*)

Continuing Engineering Education

D. Kannappan*

Introduction

The conventional education system is based on the assumptions that (i) learning can take place before adulthood only, and (ii) more learning takes place when the students are kept away from practical life for more time. However, due to the rapid development of science and technology, an individual lacks new knowledge and/or fails to acquire new skills: leading to obsolescence. In other words, the initial education provided by the beginning institutions is no longer able to support an individual throughout his working life, This obsolescence is much pronounced in the case of engineering profession. For example the half-life time, a measure of obsolescence, for chemical engineers is estimated at four years. It is needless to emphasize the fact that in fields like electronics, communication and plastic technology half-life period would be still less. One may say that the obsolescence can be overcome by increasing the duration of stay (training) in the institutions. This is possibly based on the notion that :

> "If a person had a bachelor's degree, he/she possesses a significant portion of a certain body of knowledge. If this person continues and earns a master's degree he/she possessed a still greater share of knowledge. And if the schooling was extended to include the doctoral degree, this person possessed such a thorough knowledge and ability that he/she in fact added to the body of knowledge in his/her chosen field."

It is relevant here to have a look at the two research studies carried out by Klus and Jones.

Research Studies on Continuing Education

One of the studies of Klus and Jones was aimed at determining the relationship between the extent of an individual engineer's involvement in continuing education and factors pertaining to his/her job success. Obviously the job success is directly related to the salary adjusted for age and job responsibilities. The results of their study are presented in Table 1.

Table 1

No. of continuing education programmes attended during the past two years.	Per cent of Sample		
	Above the median salary	At the median salary	Below the median salary
5	60	32	8
3 to 5	31	30	39
2	8	44	48
1	—	35	65

It may be observed from Table 1 that, of those attending more than five continuing education programmes, 60 per cent were drawing salary above the median level and among those who attended only one programme 65 per cent were drawing salary less than the median salary. This study supports quantitatively the intuition that participation in continuing education programme improves job performance significantly, The second study of Klus and Jones was directed towards the relationship between employee's satisfaction and the organisation's degree of emphasis on continuing education. Table 2 shows the findings obtained from this study.

Table 2

Organisations' degree of emphasis on Continuing Education	Per cent of sample			
	Highly satisfied	Satisfied	Above average	Not satisfied
High	40	38	20	2
Average	21	39	30	10
Low	10	19	45	26

These results reveal the interesting phenomenon that the job satisfaction is more pronounced in organisations which lay more emphasis on continuing education. Organisations which do not take cognisance of this fact will have frustrated employees with no job satisfaction; which will ultimately ruin the mission of the organisation.

Continuous Education for Continuous Adaptability

The world of today faces (i) shortages of energy

**Professor (Mech Engg.), Curriculum and Educational Media Development Centre, Anna University, Madras.*

and raw materials; (ii) demands by the developing nations for a better deal; and (iii) sociological and technological changes. These changes produce new demands on engineering solutions which grow at ever increasing rate. Therefore, the very survival of the societies depends upon their adaptability and their capacity to adjust to these changes. The key to adaptability is nothing but continuous education. To achieve this, the engineering institutions should give more responsibility to the students with regard to their education. They must devise flexible programmes which permit students to plan to remove their areas of ignorance so that they become responsible for their education. The students should be made aware of the usefulness of doing things on their own. Self study must be encouraged to gain knowledge on one's own. The student should by himself apply the knowledge gained in a strange and new situation. He should be able to recognise a problem even in a confused situation, define it, and solve it, for the world outside the educational institutions does not hand him well-organised problems in the manner "given this-find that". Identifying the problem in its entirety is often the biggest problem of all. The instruction in engineering institutions according to disciplines, has a disadvantage for the problems in practice do not arise as though they belong to a particular discipline. This actually insulates the student from reality of life. Several universities do take this into consideration and provide multidisciplinary approach in the curriculum. Also, to teach a student to act effectively, the teacher must have had some experience in similar situation. This is an important requirement for teachers who train the students especially in developing psychometric skills. The teacher should have adequate practical experience in solving real-life problems.

Norms for Continuing Education

The following types of programmes can be recognised as programmes belonging to continuing education :

(i) Intensive Short Courses of 30 hours duration or more,
(ii) After hours courses of non-credit type of 5 hours duration or more, and
(iii) Institute Seminar and/or Workshops of 5 to 30 hours duration.

Closure

The notion that the school/college education is a preparation for the rest of one's life is no longer valid, for education has become an aspect of living—a way of life. It should be accepted and kept in mind that the educational institutions provide the initial education only. The initial education thus provided should include an aspect of training the students to become continuous learners during their life time to avoid obsolescence.

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Audio-Visual Aids in Education and Research

(*Continued from page 5*)

The variety of tools outlined above provide but a brief case for their use. Still the use of these tools requires a great amount of skill on the part of teacher with regard to their positioning in the frame of teaching. Since their use requires a cost it would be prudent to make their use with great care. Where lectures can do, it is of no use to over-emphasize these tools. The decision to use what and when certainly rests with the teacher. The contents of teaching have different levels of difficulties and same are perceived while others are experienced. It would be better if slots of such areas are prepared and the decision about choice of technology is taken thereafter. In no case the use of audio-visual aids should become a matter of fashion to impress others. Marshall McLuhan has pointed out that our technology is now generations ahead of our thinking. Let us, therefore, think first and use the technology after great care. Future of teaching lies essentially not only in the depth of knowledge but also on the diversified skills of delivery. Hence audio-visual aids for effective teaching.

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CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION

(Council of Scientific & Industrial Research)

SECTOR-30, CHANDIGARH-160020

SPECIAL DRIVE FOR RECRUITMENT OF SCHEDULE CASTE & SCHEDULE TRIBE)-2ND ATTEMPT

(ADVERTISEMENT NO. 1/90)

Applications are invited for the following posts in Central Scientific Instruments Organisation, Sector-30, Chandigarh-160 020.

1. **SCIENTIST-B (One Post) (Reserved for Scheduled Caste) (No. of posts likely to vary).**

Pay Scale : Rs. 2200-75-2800-EB-100-4000+usual allowances.

Qualification : 1st Class M.Sc./BE OR M. Tech./M.E. in Electronics. Experience in Micro-Processor based Instruments/Software Development in high level language will be preferred for the post.

The total emoluments at the minimum of the Pay Scale will be Rs. 3188/- per month, at present.

2. **TECHNICAL ASSISTANT GRADE VIII (4 Posts) (Reserved for Scheduled Tribe) (Posts are classified as Technical under Group-III of New Scheme of CSIR)**

Pay Scale : Rs. 1400-40-1800-E.B.-50-2300+usual allowances.

Qualification : Diploma in Mechanical Engineering/Instrument Technology of 3 years duration. The total emoluments at the minimum of the pay scale will be Rs. 2016/- per month, at present.

A Lower Standard of suitability consistant with efficiency will be applicable to Scheduled Caste and Scheduled Tribe Candidates.

General Conditions Applicable to all above Posts.

Candidates appointed with engineering qualifications, if so required be liable to serve in any Defence service or post concerned with the Defence of India for a period of not less than four years including the period spent on training, if any, provided that such person (i) shall not be required to serve as aforesaid after the expiry of ten years from the date of appointment and (ii) shall not ordinarily be required to serve as aforesaid after attaining the age of forty years.

All posts are temporary and carry usual allowances admissible under the Central Government Rules as applicable to CSIR. Designations of posts are subject to revision on the basis of functional requirements. There is no age restriction for these Scientific/Technical posts.

Services of incumbents are transferable anywhere in India. Higher initial start can be given to deserving candidates. For regular post of Scientist-B in CSIO, appointment will be on contract basis for a period of six years unless the selected candidates happened to be permanent CSIR/Government employees. Fare limited to single second class rail fare by the shortest route from the place of residence/actual departure whichever is nearest will be defrayed to and fro Chandigarh on completion of the return journey after interview subject to production of cash receipt/bus/rail tickets.

Application forms free of cost are obtainable before 16-3-1990 from the Controller of Administration, Central Scientific Instruments Organisation, Sector-30, Chandigarh-160 020 by sending self-addressed and stamped Rs. 1.80 envelope of 23 x 10 cms. **Separate Application is required to be submitted for each post clearly indicating Post No. as in the Advertisement.**

Applications with attested copies of certificates of qualification, experience, date of birth and community certificate in respect of Scheduled Caste/Tribe candidates from appropriate authority should reach the Director, Central Scientific Instruments Organisation, Sector-30, Chandigarh-160 020 latest by **2-4-1990.** No application fees is required.

Persons working in Government Departments/Undertakings / Autonomous Organisations should apply through proper channel. Incomplete applications in any form or received after the last date for whatever reasons will be rejected.

Note :

1. Canvassing in any form and/OR bringing in any influence political or otherwise will be treated as a disqualification for the post.
2. Interim enquiries will not be attended to.
3. Any incorrect or incomplete information recorded in any application form will render the applicant ineligible for consideration even after appointment it will render the candidate to strict disciplinary action and dismissal from service.
4. Since it is not possible to call all the eligible candidates for interview the applications will be short-listed for the purpose and the decision of the Institute will be final.

Issues in Agricultural Research and Development

Ch. Devi Lal, Deputy Prime Minister and Union Minister for Agriculture, delivered the Convocation Address at the Twenty Eighth Convocation of the Indian Agricultural Research Institute, New Delhi. In a very down to earth address Ch. Devi Lal listed issues and areas in agricultural research that needed immediate attention. "It is in this endeavour that a national institute like IARI, State Agricultural Universities and other Central Institutes in the Indian Council of Agricultural Research family have to take up newer and greater challenges in research, education and transfer of technology programmes that would most appropriately meet the genuine needs and aspirations of the farmers. The farmer should occupy the pride of place and be the focal point in technology development and programme implementation," he said. Excerpts

Convocation

The country had in the recent past witnessed a sea-change in the attitude and desire of its people. The priorities of the Government have been reoriented and restructured accordingly, to meet the desired objectives. Our first and foremost task should be to improve the quality of life of the Indian peasantry, which constitutes approximately 70 per cent of the 815 million population of the country, by raising them above the poverty line and instilling in them the trust, and confidence for a better future. The Government has decided to commit 50 per cent of the investible resources to the agricultural and rural sectors of the economy. It is in this endeavour that a national institute; like IARI, State Agricultural Universities and other Central Institutes in the Indian Council of Agricultural Research family have to take up newer and greater challenges in research, education and transfer of technology programmes that would most appropriately meet the genuine needs and aspirations of the farmers. The farmer should occupy the pride of place and be the focal point in technology development and programme implementation.

Technological change is a dire necessity for achieving self-sufficiency in foodgrains and other agricultural produce But it is also a fact that the yield increase in the last decade for crops like rice, oilseeds and pulses have come about more through the vigorous extension of available technology to new areas through special programmes than through real breakthroughs in technology. While saying so, I would like to acknowledge and compliment the agricultural scientists for developing new varieties of crops and technologies for higher productivity and having convincingly shown the viability and adaptability of new technologies. The emphasis should be on district level projects, difficult and remote areas and socially and economically backward sections of the community, so that the small and marginal farmers benefit from the new technology.

I would now like to share my thoughts with you, particularly the young scientists, on some of the major issues relating to agricultural research and development :

(1) The new tools of biotechnology like genetic engineering, tissue culture, etc., which offer significant possibilities for breaking the yield barriers, and greater adaptability, should be harnessed for developing high stability crop varieties and cost effective production practices. Research should be directed to solve difficult problems associated with low productivity in drylands, wastelands and on salt affected soils, as the poverty is often intimately linked with the agriculture in these areas.

(2) Cropping and farming systems have to be evolved to raise the income of farmers by making optimum use of resources throughout the year.

(3) Greater stress must be laid on input saving and less capital intensive technology development for soil and water management, and integrated nutrient management and pest control systems.

(4) Watershed development programmes designed for rainfed areas with water-harvesting as one of its major components should be intensified.

(5) India's irrigation water

problem is partly due to inadequate water management, for only about 50 per cent of the 100 million hectare metres of the utilizable quantum of rainfall runoff is actually utilized. Added to this, deforestation and denudation of critical watersheds have upset the water cycle. We must give due attention to medium and small irrigation projects, command area development, flood control and ground water development and utilization.

6. To solve field level problems, multidisciplinary team work, based on a systems approach is a logical necessity. Technology development should be a joint sector activity involving research institutions and farmers' associations and public and private sector industries.

7. Diversification of employment opportunities in rural areas through an integrated approach involving the primary, secondary and tertiary sectors of employment and income generation has to be attempted as it will improve the economic access to food for the rural poor.

8. Group endeavour should be encouraged in areas like land and water management, pest management, nutrient supply and post harvest technology. Group endeavour is also essential for common property resource development and land use planning in rural areas, so as to benefit the weaker sections of the rural society.

9. Agro-food processing industry employing around 17 per cent of the total labour force should be developed further.

10. New materials such as plastics which optimise the use of scarce water and land and augment agricultural growth and employment should be introduced in agriculture on a large scale.

11. There are lots of complaints about timely and adequate supply of crucial inputs like seeds and seedlings, fertilizer and credit. Such bottlenecks are not conducive to attaining the required growth in agricultural production. Cooperatives are the only way by which farmers can benefit themselves and strengthen their economic wellbeing.

12. An appropriate mechanization policy which makes farm power and machinery available to the farmer, needs to be evolved.

13. Two-thirds of our cultivable land is still dependent on rain. Agricultural research must be geared to make small holdings and dry farming economically viable with emphasis on integrative and versatile technology inputs for the small farmer and neglected areas.

14. Finally, strategies in the farm sector should aim at food security, employment generation, raising income level and removing regional disparities.

I am aware that with the emerging trends and under intrinsically more difficult field situations, keeping up the momentum of growth and accelerating it further is a hard task. But at the same time I am confident that our farmers and scientists have the capability to meet this task.

The Indian Agricultural Research Institute has a critical mass of competence in science with considerable achievement to its credit in the cause of service to the farming community for over eight decades. It is because of your pre-eminence. I will charge you—the scientists specially the young scientists, and students present here with the responsibility to not only provide research back-up support and trained manpower for raising the income and employment levels of farmers but also work as a leader and pathfinder in the noble endeavour of bringing prosperity to rural India. ☐

National Institute of Educational Planning and Administration

NOTIFICATION

NATIONAL REGISTER OF EDUCATIONAL PLANNERS, ADMINISTRATORS AND EXPERTS—PREPARATION OF

The National Institute of Educational Planning and Administration (NIEPA) has undertaken the preparation of a National Register of Educational Planners. Administrators and Experts. It is envisaged that the National Register would be of immense help to the State Governments, Universities and other Academic Institutions in finding suitable experts in the areas of Educational Planning and Administration for serving on various committees. Evaluation of Projects and Professional Guidance etc. Educational Planners, Administrators and Experts who are interested to be considered for inclusion in the National Register are requested to send information about their contribution in the areas in the prescribed Proforma obtainable on request, addressed to the Registrar, National Institute of Educational Planning and Administration, 17-B, Sri Aurobindo Marg, New Delhi-110016.

Better Use of Libraries Suggested

Dr. Malcolm Adiseshiah, former Vice-Chancellor of the Madras University, suggested better use of libraries in colleges to overcome the problem of crowded classrooms. He said reorganising the teaching-learning process so that students frequented libraries, at least at the postgraduate level, was the only possible method to alleviate the problem of crowded classrooms which was peculiar to India. "If you go to other countries, you will not see many students in the classrooms. Most of them will be in the library as they know what to learn. Also, attendance is not compulsory in those countries," he said.

Inaugurating a three-day programme on 'faculty orientation on autonomy planning and management aspects' organised by the National Institute of Educational Planning and Administration, New Delhi, and Queen Mary's College (QMC) (autonomous), Madras, Dr. Adiseshiah said curriculum design should conform to the highest and latest developments in the field. He said teachers should pay more attention to their professional aspect and be conscious of quality, integrity and honesty.

Referring to the workload of teachers in autonomous colleges, he said it was the case with affiliated colleges also. This was because of the large number of students enrolling for higher education, which made the classrooms unmanageable. "This is a terrible problem and I do not see any solution."

Dr. Adiseshiah wanted autonomous colleges to elicit the views of their students on autonomy as there was a distinct lack of student participation. "You must devise methods by which students participate with you in all aspects except in evaluation," he told them. Regarding the transfer of teachers from autonomous colleges to others, he said this was a contradiction in itself. "The governing body or the academic council should be given the freedom which is necessary to see that teachers are not moved around," he said.

Dr. P.S. Subramaniam, Director of Collegiate Education, who presided, said Tamil Nadu had far exceeded the national target of autonomous colleges. The Government of India, at the beginning of the Seventh Plan, stipulated that 10 per cent of the total colleges in the country be granted autonomy during the Plan period. "We are the pioneers to give the right fillip to this novel idea and the credit goes to Dr. Adiseshiah, who was the Vice-Chancellor at that time."

He said there were 186 arts and science colleges in the State, of which 30 including four Government colleges, had been granted autonomy; 22 training colleges of which five, including three women's colleges were autonomous; and three colleges of physical education of which one was autonomous. This was besides the seven engineering colleges which had been granted autonomy. Also, autonomy for three colleges was in the pipeline, he said.

Dr. Nirmala Thyagarajan, Principal of QMC, said autonomy gave freedom to the faculty to develop the curriculum and teaching methods. Even the best curriculum remained ineffective unless activated by dynamic teaching.

Seminar on Rural Banking

A two-day seminar on Rural Banking was organised by the Department of Bank Management, Alagappa University on 7th and 8th February, 1990. Sponsored by the Indian Bank, the objectives of the seminar were (1) to assess the extent to which rural banking has achieved its objectives; (2) to ascertain the problems of bank customers in rural areas; (3) to identify the problems of bankers while serving in the rural areas; (4) to know the extent to which the poverty alleviation programmes are popular among rural people; and (5) to suggest measures for the development of rural banking.

Inaugurating the seminar, Dr. (Mrs.) Radha Thiagarajan, Vice-Chancellor of Alagappa University, said that the theme of the seminar 'Rural Banking' was a matter of serious concern as 70% of the population lived in rural areas. According to her, during the post nationalisation period, commercial banks had identified unbanked and underbanked centres to offer better infrastructure facilities for the promotion of rural based activities. While granting loans these banks were very particular in the promotion of production rather than security orientation. She referred to the process of transformation as the base for many challenges that the Indian Banking System was facing today. Erosion of profitability, mounting overdues, deterioration in customer service, and unwillingness of employees to serve in rural areas were prominent among such challenges. She further stated, eventhough agricultural lending was progressing well, the poorest of the poor was not properly identified by the bankers for financial support. Effective implementation of poverty alleviation programmes, deterrent punishment for the corrupt officials, inclination to serve in the rural areas and dedication on the part of employees were some of the suggestions made by the Vice-Chancellor for the promotion of rural banking in India.

Mr. M. Gopalakrishnan, the Chairman and Managing Director of the Indian Bank in his keynote address highlighted the stellar role of the lead bank scheme, service area approach, poverty alleviation programmes and the Regional Rural Banks in the promotion of real rural lending. Emotional involvement and attitudinal change in the outlook of employees were the two concepts that he emphasized for the development of rural banking. According to him, the planners had to keep in mind the culture and tradition of villages while paving way for the promotion of rural banking. A coordinated effort, according to him, was essential on the part of educated elite, affluent people, business people and bankers for the promotion of rural banking in the process of nation building.

The deliberations of the seminar were held in four sessions and the focus of discussion was on (i) Rural Banking in India, (ii) Poverty Alleviation Programmes, (iii) Problems of Rural Banking, and (iv) Prospects of Rural Banking.

While delivering the valedictory address, the Chairman of Pandyan Grama Bank, Mr. B. Karunakaran stated that rural banking in India would come under greater pressure during the ensuing years. According to him, banks had to be directed to undertake a more specific role in generating and sustaining the developmental activities in rural areas.

Branch Managers of Karaikudi town, University and College Professors and postgraduate students and researchers of 4 departments of Alagappa University, viz. Bank Management, Commerce, Corporate Secretaryship and Women's Studies participated in the seminar.

Teacher Orientation Course

The Academic Staff College of the Kurukshetra University organised the Tenth Orientation Course from November 15 to December 12, 1989. About fifty newly appointed University and College teachers of Kurukshetra University, M.D. University, Rohtak and Panjabi University, Patiala were invited to attend and participate in the course. They belonged to the subjects of Commerce, English Sanskrit, Economics, History, Music, Public Administration, Mathematics, Physics, Botany, Geography, Military Science and Library Science.

Thirty-three eminent scholars and renowned academicians were invited as resource persons to deliver lectures and have interaction with the participants on topics forming part of the course components viz : Awareness of linkages among society, Environment and Education; Philosophy of Education, Indian Education System and Pedagogy; Management and Personality Development; and Monitoring and Evaluation. The methodology adopted was in the form of lectures-cum-discussions, lecture-cum-demonstration, panel-discussion, seminars which were organised with the aid of equipments like TV/VCR, Slide Projector, Over-head Projector, etc.

Inaugurating the course Dr. C.L. Kundu, Director of the Academic Staff College, Kurukshetra University, highlighted the objectives of the Orientation Scheme and introduced the participants to major components of the course. He stressed that the responsibility of the teachers had multiplied manifold because of the changing objectives and trends of modern education. He also highlighted the basic features of the National Policy on Education, 1986.

The topics covered during the course included : (i) Teachers' Accountability, (ii) Characteristics of Indian Society, (iii) Indian Economic Scene, (iv) Library and Documentation Service, (v) Computers and their applications, (vi) Indian Culture and its Special Features, (vii) Education as the sub-system of the Social System, (viii) Developing Creativity among College Students, (ix) Autonomous Colleges, (x) UGC and Higher Education, (xi) How to prepare a Research Project, (xii) Methods of College Teaching, (xiii) Process of Evaluation and Computers, (xiv) Value based Education, (xix) Psycho-analysis of students, (xv) Environmental Education, and (xvi) Personality Development.

Workshop on Landuse

A one-day workshop on 'Land-use and Environmental Degradation' sponsored by the Ministry of Environment and Forests, Government of India and organised by the North-East India Geographical Society (NEIGS) was held on February 10, 1990 in the Department of Geography, Gauhati University.

The inaugural session was presided over by Prof. H.N. Sharma, the Director of the Workshop and the President of the NEIGS, while Prof. D.P. Barooah, Vice-Chancellor of Gauhati University inaugurated the workshop. The two academic sessions were chaired by Prof. K. Alam and Prof. M. Taher.

Some of the recommendations made at the workshop were as follows :

(1) Appropriate mechanisms be urgently evolved to stop environmental degradation involving the rural mass urban population including urban fringe dwellers, intellectuals, administrators and scientists;

(2) A study project on environmental degradation in Guwahati and its environs (diagonistic and prescriptive) be taken up under the sponsorship of State and Central Government;

(3) The responsibility of preparing maps and reports both at the micro and the macro-levels be entrusted to a permanent Government Agency under the name and style of an Institute of State Atlas and Thematic mapping;

(4) A nodal agency in the form of a State Government Department be set up to look after environmental balance and check degradation; and

(5) Immediate efforts be made by the State Government to identify and preserve a number of Biosphere Reserves in Assam.

JNU Entrance Examination Schedule

The Jawaharlal Nehru University (JNU) has announced that the Entrance Test for admission to various programmes of study at JNU leading to B.A. (Hons.), M.A. M.Sc, M.C A. M.Tech., M Phil/ Ph.D. and MCH/Ph.D. for the year 1990-91 will be held in 24 centres spread all over the country on 17, 18, 19 and 20 May, 1990.

Application forms together with detailed instructions including eligibility conditions can be obtained personally on-cash payment of Rs. 6/- per set of forms or by post by sending a crossed Indian Postal Order for Rs. 20/- payable to Jawaharlal Nehru University, New Delhi-110067 for one set of forms and postage alongwith a self-addressed envelope of 28 cms x 20 cms size to the Deputy Registrar (Admissions), Jawaharlal Nehru University. Additional application form can be had for Re. 1/- each plus postage required by mail. The forms will be issued upto 30 March, 1990 and the last date for receipt of application forms is 6 April, 1990.

22½ per cent (15 per cent for SC and 7½ per cent for ST) and 3 per cent seats are reserved for SC/ST and physically handicapped candidates. Such candidates passing the qualifying examination are eligible to apply irrespective of their percentage of marks.

Candidates who are due to appear in the respective qualifying examination prescribed for eligibility for admission to a particular programme are also eligible to sit in the entrance examination as per conditions laid down in this regard. However, in the event of selection, their admission shall be subject to their securing the prescribed percentage of marks in the qualifying examination and submission of all documents including final marksheet of the qualifying examination.

Registration of candidates selected for M.A. where no viva is required shall be between 18 and 20 July, 1990. while for M.Phil/Ph.D. and MA (foreign languages) IV-Year candidates, the registration will be between 31st July and 3 August. 1990. The last date for registration with late fine will be 14 August, 1990.

Continuing Medical Education

Dr. M.G.R. Medical University, in collaboration with Central Leprosy Training & Research Institute. Tirumani, Chengalpattu, Tamil, Nadu, proposes to organise a two-day Workshop on 'Early Detection of Leprosy' on March 22-23, 1990 at Chengalpattu Medical College, Chengalpattu.

The workshop would provide an opportunity for the participants from taluk and district level and also from Voluntary Organisations who are involved in Leprosy Control Programme to inter-act and provide solutions to the problems faced in early detection of Leprosy cases and to suggest various measures for early diagnosis, treatment and control of the disease. It would also serve the medical officers who are involved in the Leprosy control programme to evolve strategies for early detection and also to identify the loopholes and bottlenecks in evolving such strategies.

It would also serve as a continuing medical education programme for medical officers at Leprosy Centres at taluk and district levels, Primary Health Centres, Municipalities, Municipal Corporations, Dermatalogists, School Health Officers and Voluntary Organisations who are the vital links between sub-centres of Leprosy Control and apex centres of excellence.

Awards for Young Scientists

The Indian Science Congress Association has announced its young scientists awards for 1990. The recipients of the awards are :

Mr. Gummadi Narendra Sekhar of Bangalore University and Ms. Niti Prakash of Meerut (mathematics), Ms. E. Sandhya, Kerala University (statistics), Mr. Isar Ahmad Rizvi, Aligarh Muslim University (physics), Ms. Purnima Dixit, University of Rajasthan, and Mr. Dhanusuta Ghosh, University of Kalyani (chemistry), Mr. Anil Kumar Gupta, Indian Institute of Technology (geology and geography), Mr. Mohad Iqbal A. Khan, Bhagalpur University, and Mr. Yogesh T. Jeerai, M.S. University of Baroda (botany), Ms. Sangeetha Shukla, Jiwaji University, and Ms. Nirmala Tendu Saha, North Eastern Hill University (zoology, entomology and fisheries), Ms. Madhumita Mohanty, Utkal University (anthropology and archaeology), Mr. S.K. Srivastava, Indian Agricultural Research Institute, Delhi (agricultural sciences), Mr. Linz-Buoy George, University of Gujarat (physiology), Ms. Anuja Agarwal, Lucknow, and Chandra Mauli Dwivedi, Hyderabad (psychology and educational sciences), Ms. Jayamma Francis, Cochin University of Science and Technology (engineering sciences), and Ms. Vinita Chaturved, Central Jalma Institute for Leprosy, Agra (medical and veterinary sciences).

Unani Graduates Eligible for I.A.S. Examination

The graduates of Indian Systems of Medicine (ISM) can now appear in the Indian Administrative Service (I.A.S.) examination. According to the Central Council of Indian Medicine (CCIM), the UPSC has laid down that the candidates who have passed the final professional MBBS or any other medical examination but have not completed their internship by the time of submission of their application for the Civil Service (Main) examination will be provisionally admitted to the examination provided they submit alongwith their application a copy of the certificate from the concerned authority of the University/Institution that they have passed the requisite final professional medical examinations. In such cases, the candidates will be required to produce at the time of their interview original degree or a certificate from the concerned competent authority of the University/Institution that they have completed all requirements (including completion of internship) for the award of the Degree.

In view of this stipulation of UPSC, the CCIM says that the graduates of Indian systems of medicine are covered under other medical examinations, and have been made eligible to appear in the Civil Services Examination.

Fellowships for ISM Graduates

Lok Swasthya Parampara Samvardhan Samithi (LSPSS). a network of voluntary bodies engaged in the promotion of indigenous systems of health care and local health traditions, offers a few scholarships to the students of degree or post-graduate courses in Indian systems of medicine—Ayurveda, Unani and Siddha and in biomedical sciences.

Detailed information, in this regard, can be had from: The Secretary, Lok Swasthya Parampara Samvardhan Samithi, Post Box No. 7102, Arya Vaidya Chikitsalayam, Coimbatore-641045 (Tamil Nadu)

News from Agril. Varsities

HAU Hosts Agrl. Officers' Workshop

Dr. A.L. Chaudhry, Vice-Chancellor, Haryana Agricultural University (HAU) recently inaugurated a three-day agricultural officers workshop organised by the University at Hisar. Addressing the scientists, agricultural officers and extension workers of the State Department of Agriculture, Dr. Chaudhry said that in view of the research climatic changes, the scientists and field functionaries should reconsider the agricultural strategies for the state. In this fast developing time, the scientists and extension workers should strengthen their contact with the farmers at the grassroot level so that the farmers may be acquainted with the new techniques. Intensive efforts should be made in educating the farmers in the judicious use of natural resources, mainly the land and the water to make the agriculture sustainable. Crop facilities and cropping system suitable for different farming situations and for different target crops of farmers have to be developed to keep pace of development, he added.

Dr. Chaudhry stressed the need of availability of quality seeds to the farmers at the appropriate time. He said that since 40 per cent area of the agriculture depended on rain for its irrigation, it was imperative for the scientists to develop appropriate technology so that agriculture production could be enhanced. In view of the ever increasing population, the cultivable land was diminishing. Hence dry land area was the only challenge for the agricultural scientists where they had to concentrate for the diversification of the farming system. He urged the scientists to maintain the present trend of agricultural production by 2000 A.D. so that Haryana State can contribute to the central pool the sufficient quantity of surplus foodgrains.

Dr. S.P.S. Karwasra, Director of Research, HAU, highlighted the research work being done at the university and said that recently the scientists have identified 9 crop varieties viz. HHB-67 hybrid bajra, HC-171 and HC-260 of forage sorghum and 3 varieties of medicinal plants viz. Mulethi No. 1, HL-5 of Isabgol and RH-49 of Rosha grass. In addition, rice varieties HKR-28, HBC-19; H-974 of cotton; Raya RH-819 and RH-781; Toria TH-68; PK-327 of soybean; LH 82-6 of Lentil and RB-32 of ricebeen were identified by the University variety evaluation committee. A semi-dwarf rice strain HKR-228 has been identified by All India Rice Co-ordinated Workshop in 1989.

Shri Naseem Ahmad, IAS, Commissioner and Secretary, Govt. of Harayana, who presided over the inaugural function, said that to popularise the farming of sunflower, the State Department of Agriculture had intensified its efforts. With the diversification of the farming system, the farmers were being advised to keep in view the cost benefit of every crop. He informed that agricultural production which was mere 25.92 lac tonnes at the time of formation of Haryana had now increased to 95 lac tonnes. All this had been achieved because of the hard work put in by farmers and good collaboration between the scientists and the extension workers of the State Department of agriculture.

News from UGC

INSAT 1-B Programme of UGC

Between 8th March to 15th March, 1990 the following schedule of telecast on higher education through INSAT 1-B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

8.3.90

"Introduction to Computers"

"Unravelling the Past : Chemistry Helps in Archaeology"

"Teaching and Learning English"

9.3.90

"Modulation and Demodulation"

"An Obligation for Sefety"

"A Time to Heal"

10.3.90

"Basics of Dairy Farming"

"Batik"

11.3.90

No Telecast

12.3.9

"Photoelectric Effect—I"

"Entrepreneur & Enterprise, Case Study—I"

"Sea Shells"

13.3.90

"Mechanism of an Organic Reaction"

"Teachers Training in Low-Cost Instrumentation—A Practical Approach"

"A Battle for Life"

14.3.90

"N.D.T. Series—IV : Radiography"

"Confluence of Cultures"

"Modern Genetics and Human Welfare—8"

15.3 90

"Introduction to Computers—IV"

"Raw Materials : Iron Ore"

"Teaching English in Rural Areas"

2nd Transmission

12.00 noon to 1.00 p.m.

8.3.90

"Graphics With Microcomputers—II"

"User Defined Graphics and Pop-up Menus"

"Glimpses of Girasia Life—I"

"Composed Upon Westminster Bridge"

9.3.90

"A Date With Maths—I"

"Secrets of the Stone Water"

"What on Earth are we Doing to Our Forests ?"

10.3.90

"UGC Educational Video Festival—II"

"Career in Sports"

11.3.90

No Telecast

12.3.90

"Classical Mechanics—XI : Angular Momentum Conservation"
"Quality Control"
"Mohni Water Cooperative Society Under Ukai-Kakrapur Project"

13.3.90

"Filtration—A Laboratory Aid—I"
"Teaching as a Career"
"Basic Surgical Techniques"

14.3.90

"Corrosion—I"
"Research for Tomorrow"
"Modern Genetics and Human Welfare—VIII : Biotechnology"

15.3.90

"Graphics With Microcomputers—III, Menu Bars, Pull Down Menus, Icons and Windows"
"Glimpses of Girasia Life—II"
"World Consumer Day"

500 Sri Lankan Students to Study in India

India has agreed to provide one-time scholarships and placement to 400 undergraduate and 100 postgraduate bright students from Sri Lanka who were already admitted for higher studies at Sri Lankan educational institutions but could not continue their studies because of the closure of these institutions. The selected students will be placed in various universities, colleges and other institutions of higher education in India for studies in Social Sciences, Humanities, and Sciences from the academic year 1990-91. This was announed recently in New Delhi after a series of discussions between the representatives of India and Sri Lanka including Prof. Yash Pal, the Chairman of the University Grants Commission (UGC) and Prof. Cyril Ponnamperuma, the Scientific Adviser to the President of Sri Lanka.

Prof. Ponnamperuma said that Sri Lanka had launched a programme called "One Thousand Fellowship Programme" in which 1000 bright students from Sri Lanka would be selected and placed in universities around the world so that their education would continue without further delay. Prof. Yash Pal said that the project in India was proposed to be administered by the UGC and the Indian Council for Cultural Relations (ICCR) jointly. The UGC would identify suitable colleges and institutions for placement of the selected Sri Lankan students as also prepare a strategy and time-frame for selection, placement, orientation and commencement of the programme in accordance with the schedule of the Indian universities for the academic year 1990-91. In Sri Lanka the programme will be directly under the office of the President of Sri Lanka.

In India the scheme is estimated to involve a financial outlay of about 450 lakhs which would include funds for scholarships, contingency and other incidental expenditure like medical, hostel and miscellaneous charges. The Ministry of External Affairs, Government of India, is likely to mobilize the needed financial resources for the implementation of the programme.

AIU News

AIU Participates in World Book Fair

As in the past, the Association of Indian Universities arranged a collective display of AIU Publications and those of member universities at the 9th New Delhi world Book Fair organised by the National Book Trust, India from February 14 to 18, 1990. The Fair was inaugurated by Dr. Shankar Dayal Sharma, Vice-President of India.

The AIU stall was visited by number of academics, research scholars, librarians and students from various universities and institutions. They were highly impressed by the scholarly titles at display which covered a wide range of subjects. Amongst the Universities/Institutes that participated in the Fair under the banner of the AIU were : Jawaharlal Nehru University, New Delhi; Osmania University, Hyderabad; Jadavpur University, Calcutta; School of Planning & Architecture, New Delhi; Tata Institute of Social Sciences, Bombay; Haryana Agricultural University, Hisar; Indian Veterinary Research Institute, Izatnagar; University of Roorkee, Roorkee; Gandhigram Rural Institute, Gandhigram; All India Institute of Medical Sciences, New Delhi; Postgraduate Institute of Medical Education and Research, Chandigarh; Marathwada Krishi Vidyapeeth, Parbhani; Annamalai University, Annamalainagar; and North Eastern Hill University, Shillong.

SPORTS NEWS

South Zone Varsity Athletic Meet

A four-day South Zone Inter-University Athletic Meet hosted by Madurai Kamaraj University was held at Aditanar College of Arts and Science, Virapandianpatnam, Tiruchendur, in Tamil Nadu from 28 to 31 December, 1989. Dr. Lakshmanan, Vice-Chancellor, Madurai Kamaraj University declared the meet open at which nearly 450 athletes (300 men and 150 women) from 29 Universities participated.

The star performers of the meet among men were the 'golden boy' R. Anand Natarajan, a 20-year-old B.Pharm student of Annamalai University who claimed three golds (100m, 200m. and 4x100m), G.V. Paul of Madurai Kamaraj University who scored a golden double (shot put and discus), G. Muraleedharan of Kerala University (1500m) and R. Venkatchalapathy of Bharathidasan University (hammer).

Among women C.R. Chitra of Madras University (heptathlon), V. Chitra of Madurai Kamaraj University (discus), K.S. Bijimol of Mahatma Gandhi (800m), K.K. Theresia of Kerala (10000m.), Ancy Joseph of Calicut (100 hurdles) and K. Sumathy of Madras, who scored a golden double (200m and 400m) stole the limelight.

Calicut University emerged winners of the meet in the Men Section with 29 points followed by Annamalai with 28 points and Bharathidasan with 27 points at their second and third places respectively.

Women team of the Calicut University emerged champions in the Women section with 64 points, followed by Mahatma Gandhi University of Kerala with 39 points and Madras University of Tamil Nadu with 24 points.

Mr. B. Sivanthi Adityan, President, Indian Olympic Association was the chief guest at the valedictory function which was presided over by Mr. Kanagasabapathy, Collector of the District who also distributed prizes.

News from Abroad

Study on Quality of Campus Life

Ernest Boyer, President of the Carnegie Foundation for the Advancement of Teaching, said that while most U.S. colleges and universities are essentially in good health, student apathy, alcohol abuse, racial tensions, and "acts of incivility weaken the integrity of many institutions and limit their ability to function as vital communities of learning." He was speaking at the opening session of the American Council on Education's (ACE) annual meeting recently.

Based on data from a joint study on the quality of campus life by the Carnegie Foundation and ACE, Boyer said that "what is needed today is not a new set of rules [to replace in *loco parentis*], but a new standard by which campus life can be judged". Boyer identified five organizing principles that could "provide a framework within which a vital community of learning can be built."

The principles include :

- Campuses are purposeful communities. The study found that most students view their college education primarily as a credentialing process. Boyer claimed students' passivity toward learning is threatening the vitality of American higher education.

- Colleges and universities are just communities. Citing racial tensions on campus, minority students' sense of isolation, and continuing prejudice against women, including sexual harassment, Boyer concluded that "if colleges and universities are to be just communities, prejudice and injustice in all its forms must be challenged and uprooted."

- Campuses are, at best, open, honest communities "where freedom of expression is uncompromisingly protected and where civility is powerfully affirmed." One of the most troubling findings of the study, Boyer noted, was the "growing inclination among some students to use words as weapons of assault. This breakdown of civility is revealing itself most frequently in racial, ethnic, and sexual slurs." Campuses are caught in the middle of a dilemma, Boyer said, and they must maintain freedom of expression while assuring civility.

- Colleges and universities are disciplined communities where individuals accept their responsibility to the group and where well-defined governance procedures guide behavior. Since the principle of in *loco parentis* was abolished in the 1960s, colleges and universities have had "the agony of being held accountable" for student behavior, but lack strategies to deal with it, Boyer said.

- Colleges and universities are caring communities where each member is supported and where service to others is encouraged. Boyer called on universities to "take the initiative for community building, without a return to the rigidities of regulation." Many campuses have initiated campus-wide seminars, discussions and debates, advisory arrangements linking students with faculty, and community service programs to achieve this goal.

National Youth Festival 1990—A Report

The fifth Inter-University National Youth Festival (IUNYFEST) was held at the University of Roorkee, Roorkee from February 1-5, 1990. About 600 selected university youth artists exhibited their talents in the field of Music, Dance, Theatre, Literary Activity and Fine Arts. Pt. Debu Chaudhary inaugurated the Festival by lighting the traditional lamp. Prof. N.C. Mathur, Vice-Chancellor, delivered the inaugural address.

Quiz was the first item of the National Youth Festival in which eight teams participated and went through 8 screening rounds. Four teams viz. Universities of Bombay, Annamalai, Patna and Banaras Hindu University qualified for the finals. The Quiz turned out to be an interesting event and it ranged over a wide spectrum of subjects.

Illusion, From Dusk to Dawn, Light on a Landscape were the themes of the On the Spot Painting Competition. The quality of the paintings was good and most of the participants adhered to the realistic approach.

The next event that followed was One Act Plays. The horses in the play 'Ghora' staged by the Rabindra Bharati University, Calcutta and adopted from Tagore's original work thrilled the large audience. The event commenced with Patna University presenting the play 'Niao' (Justice) based on Shiv Murthi's story 'Tiria Charittir'. This was followed by an all-girls team from SNDT, Bombay performing 'Tamasha of Humanity'—a play by Anand Mahasvekar, which depicted how the downtrodden are exploited by the modern film makers to meet their ends. The other plays that followed were 'Royal Solution' by Pondicherry University, 'Main Panchali Nahin Hoon' by Guru Nanak Dev University; and 'Kumar Swami' by Kurukshetra University.

The first musical event of the Youth Festival began with the Indian Group Songs. Eight teams participated in this event in which each university was required to present one patriotic and one folk song. There was an anti-dowry Folk Song presented by the Utkal University. The semi-classical song, very well supported by accompanists on the mridangam, flute and violin won accolades for Mysore University. This was followed by both songs by Rajasthan Vidyapith and Banasthali Vidyapith. The most impressive presentation came from Dayalbagh Educational Institute, Agra which presented lively patriotic and a pleasant Bhojpuri Folk Song.

Skits were performed with a variety of topics ranging from population boom to lethargy in Government offices. The star of the event was, of course, Puneet Chaturvedi from Rani Durgavati University, Jabalpur who authored, directed and acted in the presentation 'Vidambana'.

A variety of ragas, namely, Madhuvanti, Jaunpuri, Kalavati, Bihag, etc. presented by various artists comprised the Classical Vocal Solo event.

In the Western Group Song section, most of the teams chose pop and country numbers. Pondicherry University's presentation was well-received. Mahatama Gandhi University chose good songs and were applauded for their rendition. North Eastern Hill University, Shillong, Indian School of Mines, Dhanbad and Bombay University also presented bubbling numbers.

Poster Making and Clay Modelling took place under the open sky. The topics for Poster Making were : 'The Secret Hunger', 'Youth and National Integration', and 'Lamp of Knowledge'. The items for Clay Modelling were 'Life is Like That', 'Ruins', and 'Paradox'. The youth artists depicted their best talents.

The Tribal and Folk Culture came alive on the stage as the teams from various universities performed this age old choreographic art. Holi Folk Dance, presented by Dayalbagh Educational Institute, Agra stole the show. Other scintillating performances came from Bharathidasan University with their folk dance 'Karagam' and 'Bhangra' performed by Punjabi University, Patiala.

Classical Dance was another attraction which witnessed variety of Schools of Dance i.e. Oddisi, Kathak, Bharathnatyam and Manipuri styles. Vaibhav Arekar of Bombay University presented Bharathnatyam — 'Dashavtaram' based on the 'Ashtapathi' of Jaydev, a 12th century exponent. Artists from Panjab, Utkal and Mysore universities also participated in this event.

A ghazal 'Mein Bhi Shayad Bura Nahin Hota' by a blind girl participant, Namita Sharma, from Panjab University, Chandigarh, who also played the 'Surmandal' simultaneously was adjudged the best in the Light Vocal Solo.

In addition to the competitive items there were many informal events which included Dumb Charades, Pot-pourri, Caricatures, Tete-A-Tete, JAM, etc.

Shri Surendra Mathur, Secretary, Sahitya Kala Parishad, was the chief guest at the valedictory function. Others who spoke on the occasion included Prof. N.C. Mathur, Vice-Chancellor, Roorkee University, Prof. P.C. Mohan, Cultural Coordinator, IUNYFEST and Shri Sampson David, Sr. Cultural Officer, AIU. A cultural programme was also presented in which selected cultural items were exhibited to mark the grand finale of the IUNYFEST.

The overall Championship Trophy was bagged by the Banaras Hindu University while the Runners-Up Trophy was shared by Bombay and Rabindra Bharati Universities.

Inter-University National Youth Festival 1990
Results

(i) Group Song (Indian)
Dayalbagh Educational Institute (Agra)—I
Telugu University (Hyderabad)—II
Banasthali Vidyapeeth (Rajasthan)—III
Punjabi University (Patiala)—IV

(ii) On the Spot Painting
Rabindra Bharati University (Calcutta)—I
Bombay University (Bombay)—II
Utkal University (Bhubaneshwar)—III
Punjabi University (Patiala)—IV

(iii) Quiz
Banaras Hindu University (Varanasi)—I
Amravati University (Akola)—II
Patna University (Patna)—III
Bombay University (Bombay)—IV

(iv) Indian Classical (Vocal—Solo)
Annamalai University—I
Banaras Hindu University (Varanasi)—II
Telugu University (Hyderabad)—III
SNDT Women's University (Bombay)—IV

(v) Skits
Jabalpur University (Jabalpur)—I
Banaras Hindu University (Varanasi)—II
Rabindra Bharati University (Calcutta)—III
Madurai Kamaraj University (Madurai)—IV

(vi) Poster Making
Banaras Hindu University (Varanasi)—I
M.L Sukhadia University (Udaipur)—II
Jammu University (Jammu)—III
Punjabi University (Patiala)—IV

(vii) Folk/Tribal Dance
Dayalbagh Educational Institute (Agra)—I
Bharathidasan University (Tiruchirapalli)—II
Punjabi University (Patiala)—III
Shivaji University (Kolhapur)—IV

(viii) One Act Play
Kurukshetra University (Kurukshetra)—I
Rabindra Bharati University (Calcutta)—II
Patna University (Patna)—III
Guru Nanak Dev University (Amritsar)—IV

(ix) Group Song Western
Pondicherry University (Pondicherry)—I
Indian School of Mines (Dhanbad)—II
Bombay University (Bombay)—III
Mahatma Gandhi University (Kottayam)—IV

(x) Classical Instrumental (Percussion)
Madurai Kamaraj University (Madurai)—I
Bombay University (Bombay)—II
Guru Nanak Dev University (Amritsar)—III
Banaras Hindu University (Varanasi)—IV

(xi) Light Vocal Solo (Indian)
Panjab University (Chandigarh)—I
Mahatma Gandhi University (Kottayam)—II
SNDT Women's University (Bombay)—III
Dayalbagh Educational Institute (Agra)—IV

(xli) Cartooning
Banaras Hindu University (Varanasi)—I
Utkal University (Bhubaneshwar)—II
University of Agricultural Sciences (Dharwad)—III
Nagpur University (Nagpur)—IV

(xiii) Western Vocal (Solo)
Mahatma Gandhi University (Kottayam)—I
Bangalore University (Bangalore)—II
University of Jammu (Jammu)—III
North Eastern Hill University (Shillong)--IV

(xiv) Classical Dance
Bombay University (Bombay)—I
Panjab University (Chandigarh)—II
Utkal University (Bhubaneshwar)—III
Mysore University (Mysore)—IV

(xv) Mime
Rabindra Bharati University (Calcutta)—I
Aligarh Muslim University (Aligarh)—II
Mysore University (Mysore)—III
Rani Durgavati Vishwavidyalaya (Jabalpur)—IV

(xvi) Clay Modelling (Solo)
Banaras Hindu University (Varanasi)
Punjab Agricultural Univ. (Ludhiana) I
Patna University (Patna)—II
Calicut University (Calicut)
Telugu University (Hyderabad) III

(xvii) Collage
Nagpur University (Nagpur)—I
Rajasthan Agricultural University—II
Utkal University (Bhubaneshwar)—III
Bharathidasan University (Tiruchirapally)—IV

(xviii) Classical Instrumental (non-Percussion)
Ravishankar University (Raipur)—I
Mysore University (Mysore)—II
Kashi Vidyapith (Varanasi)—III
Jiwaji University (Gwalior)—IV

Dance Dayalbagh, Agra
Bombay TIE FOR TROPHY
Quiz—Banaras Hindu University
Drama—Ravindra Bharati University
Fine Arts—Banaras Hindu University
Music—Mahatma Gandhi University, Kottayam
Overall Best—Banaras Hindu University
Overall 2nd Best—Rabindra Bharati University
Bombay University TIE FOR TROPHY

Book Review :

Informative and Interesting

Man Mohan Lal*

Mohammed Aslam. Trends in English Language Teaching in India. Bareilly, Prakash Book Depot, 1989. 150p. Rs. 95.00.

Even after forty three years of Independence, English has not lost its importance in India, though its standard has deteriorated to horrible extent. It is the only language that has kept and still can keep our multilingual country intact and integrated. At a time when an ever-growing need of English is being felt both as a second language and an international language, an elaborate analysis of the trends in English Language teaching in our country should be of great import. It is high time we revised the curriculum of English in our universities according to the modern needs of social interaction, academic pursuits and technological training.

Trends in English Language Teaching in India by Mohammed Aslam fulfils a long felt need in the direction of enlightening the academicians about their indifference to the practical value of English. Besides, the author has tried to draw the attention of the authorities concerned as to the faulty syllabi of English in various universities of India. English Language Teaching (ELT) requires an integrated system comprising syllabus design, pedagogical and communicative approaches, and evaluation methodology. If these components are independent and divorced from one another, one cannot expect the desired improvement in the standard of English.

The author has based his work on a wide range of relevant study. He refers to a number of authors who have dealt with the ELT question both in the general context of the world and in the particular context of India. Illustrating his observation from the situation in Kashmir region, Mohammed Aslam maintains, "...in most of the states in the country, English teachers feel handicapped because of the inadequacies in the General English Syllabuses." He stresses the need of the learner's active participation in the teaching process. Any teaching programme without pre-assessment of the learner's needs is bound to fail. 'Needs assessment' is a process of relating the result of learning to real-life situations of the student. Having balanced the pros and cons of different approaches to language teaching, the author votes for 'a structurally oriented syllabus'. He suggests that it will not be wise to borrow the western concepts and apply them blindly to the Indian situation. The classroom teacher, in India, has to develop his own methods in accordance with the specific purposes and needs of the Indian student.

It would be unfair to expect any concrete suggestions or an elaborate pedagogical methodology from such a work. However the chapter on Communicative Methodology must have formed the core of the thesis, and hence a need for deeper analysis. One will agree with the author that a particular method of English teaching is determined by three factors : "(a) the time allotted to the teaching of English within the session, (b) the level of proficiency of our students at a particular stage of learning, and (c) the resources available to the teacher." The author also highlights the defects of the current evaluation system. The present examination system cripples the whole set-up of ELT. Success in the examination is the professed aim of an Indian student *ab initio* and as such, "cramming is the natural outcome of such a system." The prevalent evaluation techniques have made the system further faulty. There is always an element of sheer 'luck' in the awarding of marks. Agreeing with Chomsky the author suggests performance tests that aim at assessing the performance of the candidate both in the productive skills—writing and speaking, and the receptive skills—reading and listening.

As a whole, the book is an informative and interesting reading for all those who are associated with some or the other aspect of English Language Teaching. Moreover, it inspires an English teacher to analyse his own situation in this light and render himself more productive. It is somewhat distressing that the book is full of misprints that obstruct its fluent reading. Nevertheless the material is of great professional relevance to the teachers of English.

**Department of English,*
Bharatiya Mahavidyalaya,
Farrukhabad, Uttar Pradesh

We Congratulate . . .

Professor B.N. Tandon, Head of the Department of Gastroentrology at the All India Institute of Medical Sciences, New Delhi who has been awarded the WHO Saskawa Health Prize comprising a statuette & $ 100,000 for outstanding innovative work in health development.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Maudgil, Asha. *Some mein problems of Wittgenstein's later philosophy.* Hyderabad. Prof. Suresh Chandra, Department of Philosophy, University of Hyderabad, Hyderabad.

2. Prithpal Singh. *The logic of ethical argument.* Punjabi. Dr. Avtar Singh, Department of Philosophy. Punjab University, Patiala.

Religion

1. Bimlendra Kumar. *An analytical study of the Pathana Pakarana with special reference to philosophy of relations.* Delhi.

Fine Arts

Drawing & Painting

1. Saxena, Ramesh Sahai. *Bundi ke bhitti chitron ka abhilekhatmak adhyayan.* Rohilkhand, Dr. S.B.L. Ssxena, Bareilly College, Bareilly.

Language & Literature

1. Chauhan, Manjushree. *A comparative study of Indian and Japanese folktales with special reference to animal tales.* JNU. Prof. S.B. Verma, Centre for East Asian Laaguages, Jawaharlal Nehru University, New Delhi.

English

1. Arora, Neena. *Nayantara Sahgal and Doris Lessing : A feminist study in comparison.* H.P.

2. Balasubramaniam, Kanagamani. *A study of the role of dictionaries in language learning with special reference to four learners' dictionaries of English.* Anna. Dr. V.R. Narayanaswamy, Prof. and Head, Division of Humanities and Social Sciences, Alagappa College of Technology, Madras.

3. Bhardwaj, Rishi Ram. *Cleanth Brooks as a New critic.* Kurukshetra.

4. Bhattacharyya, Satyabrata. *Samuel Butter : The Solitary Victorian Rebel.* Calcutta.

5. Ganapathy Rao, L. *Bawdy and vision of love and sexuality in Shakespeare's love plays.* Calicut. Dr. K. Balaraman, Prof. (Retd). XXVI/511, Palace Road, Trichur.

6. Joshi, Neeta. *The romantic element in the poetry of Dylan Thomas.* Kumaun. Dr. D.K. Lal.

7. Kochuthresiamma, P.J. *Amidst the Alien Corn : A study of the novels of Kamala Markandeya.* Kerala. Dr. K. Radha Reader, Institute of English, University of Kerala, Trivandrum.

8. Mehra, Rita. *V.S. Naipaul : A critical study of his fiction and reportage.* Rohilkhand. Dr. K.K. Kapoor, Bareilly College, Bareilly.

9. Prakash, T.V. *Wole Soyinka and Ed. Bullins as playwrights : A study in contrast.* Calicut. Dr. R. Viswanathan, Department of English, University of Calicut, Calicut.

10. Sharma, Rashmi. *Mode of meaning in the fiction of John Updike : A critical study of his major novels.* Rohilkhand. Dr. K.K. Kapoor, Bareilly College, Bareilly.

11. Singh, Satya Pal. *Humour in Hemingway.* Kurukshetra.

12. Sreenivas Reddy, P. *Treatment of myth in the novels of Raja Rao.* Barkatullah. Prof. K.C. Nair, Principal, SSL Jain College, Vidisha.

13. Tewari, Jagdish Prasad. *Supernaturalism in early nineteenth century poetry with special reference to the romantic poets.* Rohilkhand. Dr. A.L. Jain, Hindu College, Moradabad.

Sanskrit

1. Arya, Kamla. *Natakkar Harshvardhan : Teenon kritiyon ka saman adhyayan.* Kumaun. Dr. V.D. Pandey.

2. Baby Naaz. *Kamandrikiya Nitisar ka samolochnatmak adhyayan.* Kumaun. Dr. (Km) Kirag Tandon.

3. Bhardwaj, Sushma. *Ravanarjaniyam Mahakavya : Ek sahityik adhyayan.* Rohilkhand. Shri L.C. Kaushik, Bareilly College, Bareilly.

4. Bohidar, Sujata. *Gajapatipratap Arudradeva viracitasya pratampart andasya sameeksatmakam sampadanam.* Jagannath. Dr. Braja Kishore Swain; Lecturer, Department of Dharmashastra, Shri Jagannath Sanskrit Vishwavidyalaya, Puri.

5. Dhir, Renu. *Madhvacharya krit anuvyakhyan ka vivechanatmak adhyayan.* Delhi.

6. Gururani, Geeta. *Baman Puran mein varnit dharmik vichar dharayon ka sameekshatmak adhyayan.* Kumaun. Dr. H.N. Dixit, Reader, Department of Sanskrit, Kumaun University, Nainital.

7. Joshi, Bhairab Dutt. *Vishnu Puran : Ek adhyayan.* Kumaun. Dr. V.D. Pandey.

8. Joshi, Girish Chandra. *Koorma Puran : Ek adhyayan.* Kumaun. Dr. Prama Pandey.

9. Neelakantham. *A comparative study of Panini's Ashtadhyayi and Bhoja's Saraswati Kanthabharanam.* Osmania.

10. Pandey, Lata. *Shivmahapuran ka sanskritik evam darshnik vivechan.* Kumaun. Dr. D.R. Tripathi.

11. Ramulu, A Yagna. *A study of the Vartikam of Kumarila Bhatta with special reference to his criticism of Sabara' views.* Osmania.

12. Sharma, Prem Ballabh. *Grahysutrasu sanskara.* Kumaun. Dr. J.N. Joshi.

13. Subrahmanya Sastri, V. *A critical study of upasana proposed in Ashtadasa Upanishatsu according to Advaita vedanta.* Sanskrit Sansthan,

14. Tandon, Kumud. *Mahatma Gandhi per adharit Sanskrit sahitya ka samalochnatmak adhyayan.* Kumaun. Dr. H.N. Dixit, Reader, Department of Sanskrit, Kumaun University, Nainital.

15. Tiwari, Neeta. *Gopal Shastri Darshan Kesari ke Sanskrit natakon ka samalochnatmak adhyayan.* Kumaun. Dr. J.N. Joshi.

Pali

1. Barua, Sunith. *Bangaladeser Buddha Vihar O bhiksu jiban.* Calcutta.

Punjabi

1. Bhagwant Singh. *Piyara Singh Sahirai da kavi lok : Ek alochanatmak adhyayan.* Punjabi. Late Dr. Ravinder Singh Ravi.

2. Jassal, Satnam Singh. *Ishwar Chander Nanda de natakan da alochnatmak adhyayan.* Punjabi. Dr. Narinder Singh Kapoor, Department of Punjabi, Punjabi University, Patiala.

3. Satinder Kaur. *Amrita Pritam de chonvey novelan da alochnatmak adhyayan.* Delhi.

4. Taranjeet Kaur. *Social reality in modern Punjabi short story in the writings of Sujan Singh, Sant Singh Sekhon and Kartar Singh Duggal.* Delhi.

Hindi

1. Bhatt, Madhvand. *Nayi kavita ke swaroop nirmata Girija Kumar Mathur : Vyaktitva evam krititva ke sandarbh mein.* Kumaun. Dr. Virendra Kumar.

2. Bisht, B.S. *Swatantrayottar Hindi kavita mein abhivyakat jeewan mulya.* Kumaun. Dr S.S. Bisht.

3. Chandel, Naulakha Singh. *Bhartendu ke gadya sahitya mein navjagaran aur punruthan ka tattvon ka adhyayan.* Punjab.

4. Chaudhary, Lal Singh. *Ramcharit Manas mein prakshep.* Delhi,

5. Chenna Kesavulu, C. *Hindi ke sanskritik upanyas.* Venkateswara. Prof. Ram Babu Sharma, Prof. Department of Hindi, Sri Venkateswara University College, Tirupati.

6. Dhaila. Nirmala. *Chhayavadottar Hindi kavita ke naye pratimanon ka sameekshatmak adhyayan.* Kumaun. Dr. L.S. Bisht.

7. Dubey, Bela. *Acharya Ramchandra Shukla, pradeya evam mulyankan : Adhyavdhik Hindi sahitya ke chintan ke sandarbh mein.* Ghasidas. Dr. Ramamurti Tripathi and Dr. R.N.P. Singh.

8. Goel, Meena. *Hindi upanyason mein budhijivi nari evam vaivahik samanjasya : Pratinidhi upanyas lekhikaon ke athven dashak mein prakashit upanyason per adharit adhyayan.* Rohilkhand. Dr. (Mrs.) Prabha, G.D.H. College, Moradabad.

9. Goel, Nisha. *Hindi kavya aur upanyason mein prem tatha saundarya ka tulnatmak adhyayan.* Kumaun. Dr. R.K. Gupta, Prof., Department of Hindi, Kumaun University, Nainital.

10. Gosain, Madhu. *Samajik mulyon ke sandarbh mein Agyeya ka katha sahitya.* Panjab.

11. Hirittwal, Ashwani Kumar. *Hindi gazal : Adhunikta bodh aur shilp.* Kumaun. Dr. M Pathak.

12. Jogeshwar Singh. *Hindi kavita mein yuddh varnan kee parampara aur uska vikas.* Rohilkhand. Dr. K.D. Gupta, J.S. Hindu College, Amroha.

13. Jaiswal, S.C. *Nav jagaran kal ke bhasha vivad mein Hindi sahitya va patrakarita kee bhumika.* Kumaun. Dr. R K. Gupta, Prof., Department of Hindi, Kumaun University, Nainital.

14. Jayasree, P. *Spiritualism as depicted in the poetic works of Nirala.* Calicut. Dr. Iqbal Ahmad, Prof , Department of Hindi, University of Calicut, Calicut.

15. Joshi, Bhagwati. *Bhartiya mansikta aur yugjeewan per mahayudhhon ke prabhav ka akalan, 1917 se 1945 tak ke Hindi sahitya mein.* Kumaun. Dr. D.K. Paneru.

16. Joshi, Tilak Raj. *Mahadevi Verma ke kavya mein darshnik chetna.* Kumaun. Dr. R.P. Joshi.

17. Kakkar, Sarita. *Nayi kavita kee sarjana evam kuntha chate dashak se lekar ab tak kee kavya rachna ke pariprekshya mein : Kavya sarjana evam kuntha ke sambandhon ka vishleshnatmak anusheelan.* Rohilkhand. Dr. M.S. Shukla, Govt. Raja College, Rampur.

18. Kapkoti, Munni. *Hazari Prasad Dwivedi ke upanyason kee sanskritik prishtbhumi.* Kamaun. Dr. Neerja Tandon.

19. Krishna. *Satvan dashak ke Hindi upanyason mein sukh kee avdharana.* Hyderabad. Dr. Nurjahan Begum, Lec-

turer, Department of Hindi, University of Hyderabad, Hydrabad.

20. Kshatriya, Pramila. *Yashpal ke katha sahitya mein nari chetna.* Rohilkhand. Dr. U.K. Shankhdhar, N.M.S.N. Das College, Budaun.

21. Kumar, R.N. *Vakokti sidhant ke paripekshya mein Hindi ka anusheelan.* Kumaun. Dr. M. Pathak.

22. Mithilesh Kumari. *Hindi sahitya mein Ganga kavya parampara.* Rohilkhand Dr. Brajendra Awasthi, N.M S.N. Das College, Budaun.

23. Mohal, Raj Kumar. *Sant Jaitram (Kabirpanthi) kee-vani mein manav mulyon ka adhyayan.* Punjabi. Dr. Manmohan Sehgal, Department of Hindi, Punjabi University, Patiala.

24. Narayana Reddy, N. *Nayi kahani mein istri-purush sambandh.* Venkateswara. Dr. K. Ramanathan, Reader, Department of Hindi, Sri Venkateswara University College, Tirupati.

25. Pandey, Geeta. *Dr. Ram Darsh Mishra ke katha, sahitya mein yatharth chetna.* Rohilkhand. Dr. V.S Nagar Degree College, Pilibhit.

26. Pathak. M. *Prasad kavya ka dhwanivadi adhyayan. D. Litt.* Kumaun.

27. Prabhakar, Sangita. *Hindi ke lalit nibandhon mein sanskritik mulya : Purvkathan evam prarup* Panjab.

28. Rahman, Shahnaz. *Swatantrayottar Hindi katha sahitya mein Muslim kathakaron ka yogdan.* Rohilkhand. Dr. Shanno Devi Agarwal, Govt. Girls College, Budaun.

29. Rastogi, Sandhya. *Adhunik Hindi ekanki sahitya mein rashtriya chetna, san 1857 se 1947 isvi tak.* Rohilkhand. Dr. U.K. Sankhdhar, N.M.S.N., Das College, Budaun.

30. Saxena, Chitra. *Adhunik Hindi ke nirman stambh Raja Shivprasad Sitare evam Raja Laxman Singh ka tulnatmak adhyayan.* Rohilkhand. Dr. Jyoti Swarup, Bareilly College, Bareilly.

31. Sharma, Mridula. *Ramcharitmanas mein pratipadit jeevan mulya : Aaj ke paripreksbya mein.* Rohilkand. Dr. Dipti Gupta, Vardhman College, Bijnor.

32. Tiwari, Rajkumar. *Narmada Prasad Khera : Vyaktitva evam krititva.* Durgawati. Dr. Shrish Kumar. Department of Hindi, Rani Durgawati Vishwavidyalaya, Jabalpur.

33. Trivedi, Kishore Lal. *Swatantrayottar Hindi upanyason ka nari manovigyan parak anusheelan : Mahila upanyaskaron ke vishesh sandarbh mein.* Kumaun.

Urdu

1. Jabeen, Mehar. *A critical editing of Tazkira-e-Shoara Intikhar-e-Yadgar by Amir Minai introduction and comprehensive notes.* Rohilkhand. Sri Z.H. Waseem, Bareilly College, Bareilly.

2. Khalid Ashraf. *A comparative study of the contents and trends of Indian and Pakistani novels.* Delhi.

3. Merajul Hasan. *Fani kee shaeri mein huznia anasir.* Rohilkhand. Dr. Fehmida Kaheen, Govt. Girls College, Rampur.

4. Mohammad Nasim. *Akhtarul Iman : Life and art.* Calcutta.

5. Syed Abdul Sattar Saheb. *Dabistan-e-Golkunda kee shairi mein Hindustani anasir.* Venkateswara. Prof. Mohammed Sulaimen Khan, Prof. and Head, Department of Urdu, Sri Venkateswara University College, Tirupati.

Bengali

1. Das, Dhruba Chandra. *Bharatiya loknatyer dhara.* Rabindra Bharati.

2. De, Swapan Kumar. *Unish Sataker Bengla gadye chalet ritir kramabikash.* Burdwan. Prof. S.B. Gyosh, Department of Bengali, University of Burdwan, Burdwan.

3. Patra, Anjushri. *Narendranath Mitra : Jivan-O-sahitya.* Burdwan. Dr. Sumita Chakraborti, Reader, Department of Bengali, University of Burdwan, Burdwan.

4. Samaddar, Bhaswati. *Bangla upanyaser palabadal, 1966-1978.* Calcutta.

Marathi

1. Bharambe, Mandakini Rambhau. *Khandeshi loksahityateel vividh vangmayeen prenacha chikitsak abhyas.* Nagpur. Dr. S. Malti Patil, Department of Marathi, Institute of Art and Social Science, Nagpur University, Nagpur.

2. Dadagaonkar, Uma Padmakar. *Anand Sadhale : Wangmayeen vyaktitwachi iadan ghadan.* Osmania.

Kannada

1. Gopalakrishna, V. *The place-names of Kolar District : A socio-linguistic study.* Bangalore. Dr. H.P. Nagargaiah, Prof. Department of Kannada, Bangalore University, Bangalore.

2. Panduranga, D.R. *Dakshina Kannada Jilleya bhairaru sahitya ka samskritika adhyayan.* Mangalore. Dr. U.P. Upadhyaya, Prof., Govinda Rai Research Centre, Mahatma Gandhi Memorial College, Udupi.

Telugu

1. Lakshma Reddy, K.S. *Tenali Ramakrishnrni pada prayoga vaichitri.* Osmania.

2. Nagaranjani, T.V. *Adhunika Telugu rachaitrula navatlalu : Samajika avagahana.* Hyderabad. Dr. C. Ananda Raman.

3 Shanmugam, S. *A critical study of the Srinatha's Saiva Bhakti kavyas.* Bangalore. Dr. G.S. Mohan, Department of Telugu, Bangalore University, Bangalore.

Geography

1. Arya, Trilochan. *Service centres planning of Pithoragarh District.* Kumaun. Dr. A.K. Singh.

2. Bhadrapur, Virupaxappa Sangappa. *Dynamics of agriculture in Bellary District : A geographical analysis.* Karnatak. Dr. G.S. Naregal, Reader, Department of Geography, Karnatak University, Dharwad.

3. Chitra. *The geography of nutrition in Moradabad District of U.P.* Rohilkhand. Shri R.M. Mathur, K.G.K. College, Moradabad.

4. Dogra, Bodh Raj. *Palaeoclimatic observations of Jannu Province Batote Area and Nagrota Hills : A comparative review based on Lithofacies and fossils.* Visva-Bharati. Sri G. Kapat, Department of Geography, Visva Bharati, Santiniketan.

5. Joshi, Brijendra. *Upri Saryu Basin ka krishi bhugol.* Kumaun. Dr. R.P. Upreti.

6. Joshi, K.C. *Determinants of agricultural productivity in Himalaya : A case study of Almora District.* Kumaun. Dr. R. Chand.

7. Shah, Abdul Rauf. *Variations in levels and growth of agricultural productivity in Syria.* Aligarh. Dr. Ali Mohammad Sulaim.

History

1. Ajaz Bano. *Socio-political condition of Gujarat during the 15th century.* Aligarh. Prof. I.A. Khan, Department of History, Aligarh Muslim University, Aligarh.

2. Ansari, M.A. *Kumauni shilpkaron ka samajik, arthik evam sanskritik itihas : Ek adhyayan, 1815-1947.* Kumaun. Dr. A.S. Rawat.

3. Bisht, Bharati *Almora Janpad ka prashasnik itihas, 1857 se 1947 tak.* Kumaun. Dr. A.K. Mittal.

4. Bora, Manju. *Swatantrata Sangram tatha Kumaun ke vikas mein Hargobind Pant ka yogdan.* Kumaun. Dr. A.K. Mittal.

5. Chatterjee, Mausmi. *Chhattisgarh mein Ramkrishan Mission ke karyon ka vishleshnatmak adhyayan. 1924 se vartman tak.* Ghasidas. Dr. Ramendra Nath Mishra, Reader, Department of History, Ravi Shankar Vishwavidyalaya, Raipur.

6. Dayalan, D. *Early mediaeval temples of Tamil Nadu: Their role in socio-economic life C.A.D. 550-925.* Nagpur. Prof. Ajay Mitra Shastri, Department of Ancient Indian History, Culture and Archaeology, Nagpur University, Nagpur.

7. Devi Singh. *A critical study of Dr. B.R. Ambedkar's thoughts and role in the nation-building, 1891-1956.* Rohilkhand. Dr. G.S. Arora, Bareilly College, Bareilly.

8. Dhillon, Inder Pal Singh. *The Indian military system, 1947-84 : A critical appraisal of higher direction of war.* Punjabi. Dr. A.C. Arora, Department of History, Punjabi University, Patiala.

9. Gupta, Navin Chandra. *Tibbat Abhiyan : Ek alochnatmak adhyayan.* Rohilkhand. Sri P.C. Saxena, Bareilly College, Bareilly.

10. Joshi, Asha. *Pithoragarh Jile ka rajnitik evam sanskritik itihas, 10vin shatabdi se 1815.* Kumaun. Dr. M.C. Bhatt.

11. Pant, Sanjay Kumar. *Kumaun mein prachalit janmanyatayen : Ek itihasik adhyayan, 1815 se.* Kumaun. Dr. A.K. Mittal.

12. Ray, Kabita. *Some aspects of the history of public health in Bengali, 1921-47.* Calcutta.

13. Raza, Mohammad Syed Jabir. *Punjab and Sind under Ghaznavies, 11th and 12th century.* Aligarh. Prof. I.H. Siddiqui, Reader, Department of History, Aligarh Muslim University, Aligarh

14. Santosh Kumari. *Jahangir kaleen Mughal chitrakala ka alochnatmak adhyayan.* Rohilkhand. Dr. A.N. Singh, K.G.K. College, Moradabad.

15. Swaminathan, Rama Sivrama. *The origin and emergence of style in early Chola art.* Baroda.

16. Zuberi, Nazhat Ara. *An archaeological study of District Budaun.* Aligarh. Prof. R.C. Gaur, Department of History, Aligarh Muslim University, Aligarh.

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto 10th April, 1990, for the posts of Director in the following Institutes/Centres :

1. At the Rajendra Memorial Research Institute of Medical Sciences, Patna (Bihar State).

This Institute conducts studies on the epidemiology, clinical aspects, immunology and chemotherapy of Kala-Azar and also other related parasitic diseases. The Institute has excellent facilities for undertaking research in the above fields and is equipped with modern. Laboratories and equipments. This Institute has a staff of over 100.

Qualifications & Experience : Essential : MBBS with M.D./Ph.D./D.Sc. in Parasitology/Microbiology/Preventive Medicine/General Medicine or related discipline with 15 years research/teaching experience with original work as evidenced by publications.

Desirable : Administrative experience in responsible positions.

Job Requirements : It is a top research management post. The Director will have the overall responsibility of the Institute for creating an atmosphere conducive to creative work; to promote biomedical research in the field of communicable diseases, to train technical manpower and to interact with local health authorities to help in the solution of their health problems in the region.

2. At the Regional Medical Research Centre, Bhubaneswar

This Centre is engaged in scientific research related to diseases with high prevalence in the State of Orissa and neighbouring States with major emphasis on filariasis, malaria, leprosy and diseases prevalent in the tribal population.

Qualifications & Experience : Essential : MBBS with a doctorate in Pathology/Microbiology/Preventive Medicine or related disciplines with research experience of 15 years with original work as evidenced by publications.

Desirable : Administrative experience in responsible positions.

Job Requirements : It is a top research management post. The Director will have the overall responsibility of the Centre and for creating an atmosphere conducive to creative work. To promote biomedical research in the field of communicable diseases, to train technical manpower and to interact with local health authorities to help in the solution of their health problems in the region.

Salary/Conditions of Service : The scale of pay attached to the post is Rs. 5900-200-6700 Plus allowances as per Central Govt. Rules and N.P.A. of Rs. 900/- p.m. for medical graduates only. Higher initial pay can also be considered. Free medical aid and leave travel concession are also permissible for the employee and his family as per Govt. rules.

Age : Below 50 years. SC/ST candidates allowed relaxation in accordance with Govt. of India Rules. The age limit for Director, RMRC, Bhubaneswar is relaxable in special cases.

Educational qualifications relaxable in the case of candidates otherwise well qualified Benefits of pension admissible. Private practice is not allowed. However, non-practising allowance is admissible to medical graduates only as per rules of the Council. Application forms can be obtained from the office of the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi-110 029 to whom the complete application form should be sent, accompanied with crossed postal order for Rs. 8/- (No fee for SC/ST candidates) made out in the name of the Director General, ICMR, New Delhi. Applications without postal order will not be entertained.

Candidates called for interview will be paid 1st class rail fare by the shortest route. No TA/DA is admissible for joining the post or on termination of appointment. Application from the employees working under the Central/State Govt., Semi Govt. and Govt. controlled undertakings should be sent through the employers and be received before the closing date alongwith the certificate that the applicant will be relieved within three months of receipt of appointment orders. Advance copies will be considered subject to the proviso that the certificate will be produced at the time of personal discussion. Applications received after the closing date will not be considered. At the time of interview they should produce "No Objection Certificate" from their employer.

The name of the post and of the Institute/Centre must be indicated in the appli cation. Incomplete application will not be entertained.

Government of India

Ministry of Human Resource Development
(Department of Education)

CZECHOSLOVAK GOVERNMENT SCHOLARSHIPS 1990-91

Applications are invited on plain paper in the format at Annexure-I from Indian nationals residing in India for the award of 5 (Five) scholarships offered by the Government of Czechoslovakia for Post-Graduate studies leading to Candidate of Sciences (Ph.D) Degree.

Subject Fields : (i) Nuclear Physics, (ii) Nuclear Chemistry, (iii) Environmental Protection and Formation, (iv) Silicate Technology, (v) Wood Technology, (vi) Communications and Safety Systems in Transport, (vii) Czech or Slovak Language and Literature.

Value : Adequate Maintenance allowance Board at Students Canteens at prices paid by Czechoslovak Students; Accommodation in Students' Hostels of respective Universities; Free Medical care.

Duration : Upto 3 years.

Age : 33 years as on 1.1.1990 (Relaxation in age upto two years will be given in the case of Scheduled Caste/ Scheduled Tribe candidates).

Qualifications : Uniformly good academic record with at least 60% marks at Master's degree level in Science/ Engineering/Technology relating to the field of study or equivalent qualifications in the subject selected or in an allied field.

Essential Experience : At least two consecutive years teaching/research/practical experience as on 1.1.90 in the subject field selected, after the prescribed qualifications. Successful completion of M.Phil will be counted towards one year's experience.

Passage Cost : Travel expenses from India to Czechoslovakia and back will be borne by the candidates or his/her sponsors/employers. Subject to availability of funds, the passage cost may be met by the Government of India, provided the candidate is eligible under the rules.

Note : (1) The following documents must be attached with the application; (a) Attested copy of the certificate certifying the date of birth (b) Candidates belonging to SC/ST must attach a copy of certificate to this effect. (c) Attested copies of marks sheet of qualifying examination. (d) Attested copies of all degree/diplomas/certificates etc. (e) A clear and precise programme of study/research proposed to be undertaken in donor country (f) A recent passport size photograph of candidate to be affixed on the prescribed application form. (2) Application in the subject field other than those specified above will not be considered. (3) Candidates who have already been abroad for study specialisation/training either on scholarship or in their own are eligible to apply only if they have been in India for at least three consecutive years after their return from abroad. (4) Applications of candidates who are at present abroad will not be considered. (5) Candidates should have sufficiently good knowledge of India and the Donor country. (6) Applications which do not contain any of the required documents will be treated incomplete and will not be considered. (7) No correspondence will be entertained with candidates not selected for interview/scholarship. (8) Canvassing in any form will be a disqualification (9) Candidates must send their applications fully sponsored by their employers. Advance application duly completed in all respects may also be considered provided the application through employer is received within a fortnight from the last date prescribed for the receipt of completed applications. (10) Applications received after the prescribed date will not be entertained.

Candidates should apply for the above scholarships on plain paper (preferably typed) furnishing the following details/particulars to the Deputy Educational Adviser, Ministry of Human Resource Development, Department of Education, External Scholarship Division, Section ES_I, Room No. 516 'B' Wing, Shastri Bhavan, New Delhi-110 001 latest by 15.3.1990.

APPLICATION FORM

Passport size photograph duly signed in ink to be pasted here (without photograph application will be considered incomplete)

1. Scheme under which applied :
   Subject : . . . . Sub-subject : . . . .
2. Name in full as in passport Dr/Shri/Shrimati/Kumari (in capital letters).

(Surname) (First Name) (Second Name)

3. Name of father :
4. Name of the sponsoring authority and/or name of the authority which will employ you on return from abroad.
5. (a) Date of Birth :
   (b) Place of Birth :
6. (a) Are you a citizen of India :
   (b) State which you belong :
   (c) Are you a member of Scheduled Caste/Seheduled Tribe ? If so, give particulars and attach certificate from the District Magistrate of your place of residence in support of your claim.

For official use only : A Q E

7. Address of the applicant with Pin Code Numbers :
   (i) Present/Mailing :
   (ii) Permanent :
8. Particulars concerning Examinations passed commencing with Matriculation or equivalent examination (attach attested photocopy of each certificate/diploma/degree for record)

University/Board/ Institution	Examination passed with year	Class/Division	Percentage of marks & position, if any	Subject taken

9. (a) Details of papers published, if any :
   (b) What you have been doing since last examination mentioned under Col. 8
10. (a) Particulars of employment :

Office/Institution where employed	Date of Joining	Date of leaving	Post held	Monthly salary	Nature of Duties

   (b) Have you any contract obligation with your employer ? If so, furnish details.
11. Knowledge of foreign language, if any (attach proof if possible)

Skill		Very Good	Good	Fair	Nil
Comprehension	Spoken				
	Written				
Expression	Speaking				
	Writing				

12. Nature of proposed programme of study/research :
   (a) Field of Study
   Main subject :
   Sub subject :
   (b) Scholarship/Fellowship desired for :
   Training/Specialisation :
   Doctoral Study/Research :
   Post-Doctoral Study/Research :
   (c) Name of the Institution (if known) where admission/training is desired (in order of preference).

(d) Are you willing to accept a place at some other institution if the appropriate scholarship agency reccommends it ?

(e) Have you already approached any University or University or University Professor in the country in which you intend to study ? If so, give name and results.

(f) Degree sought, if any :

(g) Give separately in extra sheets, brief statement in about 100 words each about.
   (a) The work engaged in
   (b) Nature, programme of study/research desired.

13. Future prospects after studies/research.
   (a) Plan for the future
   (b) How are these related to the technical or economic development of the country ?

14. (a) Have you applied for any other scholarships in the last two years ? If so, state the name(s) of the scholarship(s) and the subject of study/research proposed therein. Are you willing to be considered under any similar scholarship scheme involving study in another country ? If so, which ?
   (b) If you had applied under this scheme previously please indicate the result.

15. Give below the names of two persons (they must not be related to you) who are in a position to testify from their personal knowledge as to your fitness for the proposed courses of study. They must be persons under whom you have worked or study.
   (i) Name with full address :
   (ii) Name with full address :

16. Have you ever been abroad ? If so, give the following particulars :

Country Visited	Date of Visit	Duration of Visit	Purpose of Visit	Scholarship received, if any

17. Father's name (in full) :
   (a) Nationality :
   (b) Occupation :
   (c) Address :

18. In case you are married, please state :
   (a) The name of your Wife/Husband with full address :
   (b) Nationality :
   (c) Occupation (Please give designation with full address if he/she is employed)

19. Next of kin to be notified in the case of emergency (give name, address and relationship)

20. I Hereby declare that the entries in this form and the additional particulars (if any) furnished in reply to the questions above are true to the best of my knowledge and belief

Place :
Date :

(Signature of the Candidate)

21. I understand that if I fail to avail myself of this scholarship under any circumstances, the Government of India will not consider me for any scholarship being administered by them for a minimum period of atleast one year from the date by which this scholarship should have commenced.

Place :
Date :

(Signature of the Candidate)

22. (a) Certified that Shri/Smt./Km. . . . . .is employed by us/me. He/She has been working here as ————since————and has been sponsored by us/me for study abroad.
   (b) He/She will be relieved by me/us, if selected.
   (c) I/We undertake that he/she will be permitted to join his/her department/organisation on return from study abroad. I/We will ensure that his/her terms and conditions of service i.e. salary, seniority, promotion, leave etc. will not be adversely affected on account of his/her absence and further that every thing possible will be done to provide the scholar with work and conditions of service suitable to and commensurate with his/her qualifications/training obtained abroad.

Place :
Date :

(Signature of Employer/Sponsoring Authority)
Seal of Office

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Ministry of Human Resource Development (Department of Education)

CONFEDERATION OF BRITISH INDUSTRY OVERSEAS SCHOLARSHIPS 1990-91

Applications are invited from Indian Nationals who are working in Civil Engineering, Electrical and Mechanical Engineering Industries particularly from those, who have Collaborative agreement with U.K. Firms for award of 4 (Four) Scholarships offered by the Confederation of British Industry (CBI) London, for advanced professional training in the subject fields mentioned against each.

Group (A) Civil Engineering : structural design; transportation studies; port and harbour engineering; highway design/construction; geotechnical engg.

Group (B) Electrical/Mechanical Engineering : building services (installations); railway signalling; communications networks; software applications.

Duration : 4-12 months.

Value : £5,784 per annum (£482 per month), Free from U.K. Government Income Tax or other statutory deductions.

Passage Costs : (a) The CBI Scheme will meet the cost of scholar's outward (homeward) air fares at the end of their scholarships, provided the scholarship is for 6 months or longer; (b) The CBI Scheme will not longer meet the cost of scholars' inward fares to the U.K. Scholars or their employers, as the case may be will be required to confirm in writing their ability and willingness to meet this cost: (c) For scholarships of less than 6 months duration, the scholar or his employer will be required to meet the whole cost of both inward and outward fares.

Minimum Qualification : (1) Uniformly good academic record, with a first class Degree in Civil Engineering, Electrical or Mechanical Engineering. (2) Minimum of 5 years professional experience with documentary evidence in Engineering in the concerned fields after obtaining Degree mentioned at (1) above. Those awards are Primarily intended for young Professional Engineers and not for Senior personnel or academic staff.

Sponsorship : Only those candidates who are sponsored by their Employers and will return to their jobs on completion of their training in U.K. and undertake to serve their employers for a minimum period of three years are eligible to apply. Preference will be given to candidates from Public Sector Undertakings and Firms viz. Bureau of Public Enterprises. Federation of Indian Chamber of Commerce and Industries and those which receive aid or have collaboration with Industries or Organisations in U.K.

Age : Candidates should be not more than 33 years of age as on 30-9-1990, however, it is relaxable by two years in the case of SC/ST candidates.

Note : (i) Only candidates with 60% marks and above at the qualifying level are eligible. Where grades are awarded exact percentage of marks and the conversion formula of the University/Institutions must be indicated. (ii) Equivalent foreign Degrees are acceptable in all cases. (iii) Candidates who have already been abroad for studies/training or specialisation either on a scholarship or on their own. are eligible to apply only if they have been in India for atleast three consecutive years after their return from abroad and (iv) Candidates should have sufficiently good knowledge of U.K. and India. (v) Candidates who are already abroad are not eligible to apply.

N.B. (i) Application on the prescribed format given below accompanied by all required documents will be entertained. (ii) Candidates who do not possess the requisite qualifications and training and other conditions as mentioned above need not apply.

Candidates should apply for the above scholarships on a plain paper with a recent passport size photograph furnishing the following details/particulars to the Assistant Educational Adviser, Ministry of Human Resource Development, (Deptt. of Education), External Scholarship Division. E.S. 4 Section. Room No. 517 'B' Wing. Shastri Bhavan. New Delhi-110001, by 31st March, 1990. Applications received late will not be entertained.

FORMAT OF APPLICATION

Recent passport
size photograph
duly signed to
be pasted here

1. Name of the Scholarship Scheme :
   (a) Group-A : Civil Engineering.
   Group-B : Elec./Mech. Engineering.
   (b) Subject :
2. Name of the candidate :
   (in block letters) full mailing address)
   (i) Address Permanent Present.
   (ii) Marital Status
3. Date of birth and the State to which the candidate belongs.
4. Whether a member of SC/ST, if so give full particulars.
5. Academic record starting from High School/Higher Secondary onwards.

Name of the University/ Institution	Exam(s) passed	Year of passing	Division/class with position, if any.*	Percentage of marks obtained	Subjects taken

*In case no Division/Class is awarded and only grading is done, exact percentage of marks and conversion formula adopted may be mentioned.

6. (a) Details of professional/practical training and research experience, specifying period and number of papers published.
   (b) Details of employment after obtaining requisite educational qualifications with date of employment and name of Employers.

(c) Name of Organisation/ Firm/Industry where employed	Date of appointment	Date of leaving	Post/ Designation	Main duties	Scale of pay	Total pay	Reasons for leaving

7. Names, designation and address of three referees who are acquainted with the work of the candidate.
8. Have you been abroad ? If so, give full particulars of the country and the period. Also mention the year of return to India.
9. Proposed programme of study/research training specifying details on a separate sheet.
10. (i) The work at present engaged in (ii) futnre plans prospects after the proposed training studies/research (iii) nature and programme of study/research desired (iv) how are these related to the technical or economical development of India ? Please enclose a write-up of about 300 words in this behalf.

NOTE (1) Attested copies of all certificates regarding proof of age, qualifications from Higher Secondary onwards must be attached with the application.

(2) Candidates must send their applications fully sponsored by their Employers. However, advance applications will be considered provisionally provided received complete in all respects, pending sponsored by employers. (N B. The candidates called for interviews shall be required to bring letters from their referees alongwith them). Incomplete applications and without sponsorship letters will not be entertained for interview.

Place Date

(Signature of the Candidate)

davp 89/1097

No. F. 7-1/90-ES. 5

Government of India

Ministry of Human Resource Development (Department of Education)

E.S. 5. Section

AUSTRIAN GOVERNMENT SCHOLARSHIPS, 1990-91

Applications are invited on the format given below for a restricted number of scholarships offered by Austrian Government for the academic year 1990-91 in the following Austrian related research subjects: (i) Archaeology, (ii) Austrian Literature; (iii) History; (iv) Philosophy as well as Theology.

Duration : The courses will be of a maximum duration of 9 months.

Qualifications : A Master's degree in the concerned subject with 60% marks or above or equivalent qualification in subject chosen or relative field with two years consecutive experience in teaching/research/practical field after obtaining Master's degree. Degree of M.Phil. will be counted towards one year's experience.

Age Limits : Between 21 and 35 years as on 1st October, 1990.

Allowances : An allowance of AS 6800/-, In addition a book-allowance of AS 1000/- per semester to the full term scholarship awardees will be granted by Austrian Government. No passage cost from New Delhi to Austria and back will be paid by Austrian Government. However, Government of India may consider paying the passage cost both sides to the candidates subject to availability of funds and under certain conditions of pay limits not exceeding Rs. 1000/- per month as old basic pay.

Last date : Applications may be forwarded to Assistant Educational Adviser, E.S 5 Section, Ministry of Human Resource Development, Department of Education, Shastri Bhavan, New Delhi latest by 20th March, 1990.

Note : (i) Candidates who are abroad at present need not apply. (ii) Candidates who have been abroad on a scholarship are not eligible to apply unless they have completed their three years stay in India after their return. Candidates who have availed scholarship under the 'scheme of scholarships for study abroad' should have completed five years stay in India. (iii) Candidates are expected to have some knowledge of the geographical situation, culture & heritage of India and Austria. (iv) Employed persons must route their applications through their employers alongwith following documents (a) No Objection Certificate from their employers, (b) A recent health certificate showing the candidates' mental and physical fitness, (c) A document giving evidence of employment status as well as guarantee of re-employment after their return to India. (d) Two recommendation letters from professors of their universities/colleges, (e) All attested copies of certificates/degrees showing educational qualifications and date of birth (f) Candidates who are under-age/over-age and not fully qualified need not apply, (g) Applications received late will not be considered. (h) Incomplete applications without documents will not be considered. (i) Canvassing in any form will be a disqualification.

APPLICATION FORM

Austrian Government Scholarships. 1990-91
for
Specific Austria Related Research Projects

A recent
Passport size
Photograph

1. Name of the Candidate
   (in Block Letters)
2. (a) Subject
   (b) Sub-subject
3. (a) Present Address
   (b) Permanent Address
4. (a) Date of Birth
   (b) Age as on 1.10.1990.
5. State to which the candidate belongs.
6. Whether a member of SC/ST/Backward Community
   (If so, attach the relevant proof)
7. Qualifications :
   (Starting from High School or Hr. Secondary)

Examination Passed	Name of Board/ University	Year of Passing	Division or Class	Percentage of Marks	Subjects Taken
1	2	3	4	5	6

(In case no Division or class in awarded and only grading is done, the Conversion Formula adopted may be mentioned with exact percentage of marks obtained.)

8. Experience :
9. Number of Papers published, if any.
10. Employment Position :
    (a) Nature of employment
    (b) Designation
    (c) Date of joining
    (d) Complete address of place of work/office/Department etc.

11. Have you been abroad ?
if yes, state
   (a) Date of leaving India
   (b) Date of Return to India
   (c) Country visited
   (d) Purpose of visit.

12. Proposed Programme of Study/Research/Training specifying :
   (i) the future plans and prospects of the proposed studies/research in at least 300 words, and
   (ii) work at present engaged in.

Date :
Place :

(Signature of Candidate)
davp 89/1164

Office of the Registrar

KAKATIYA UNIVERSITY

WARANGAL

No. 225/A2/KU/90

Dated : 22-2-1990

ADVERTISEMENT No. 1/90

Applications are invited in the prescribed form for the following posts in the Kakatiya University Service so as to reach the undersigned on or before 30-3-1990.

Sl. No.	Department	Category	No. of Posts
(1)	Pharmacy	(i) Reader (ii) Lecturer	1 2

15%, 7.5% and 25% of the vacancies of Lecturers & Readers are reserved for the eandidates belonging to SC, ST & BC respectively as per the roster in accordance with G.O.Ms. No. 995 Dated ; 16-12-1982.

The number of posts reserved for various categories is as under :

Category	Total	OC	SC	ST	Backward Class			
					A	B	C	D
Group-III Readers	1	1	—	—	—	—	—	—
Engg. & Technology Lecturers	2	1	1	—	—	—	—	—

The above mentioned posts have been sanctioned by the UGC under VII Plan and are subject to concurrence of the Andhra Pradesh State Government.

Prescribed application forms can be obtained from the Office of the Incharge, Publication Cell, Registrar's Office, Kakatiya University, Vidyaranyapuri, Warangal-506 009 in person or by Post by sending a self-addressed envelope affixing Rs. 2/- (Rs. Two Only) postage stamps on payment of Rs. 20/- either by a Challan payable at the State Bank of Hyderabad, Kakatiya University Branch or by sending a Crossed Demand Draft in favour of the Registrar, Kakatiya University, Warangal. Money Orders and Postal Orders will not be accepted.

The University Reserves the right to fill or not to fill all or any of the posts.

Details of qualifications, specific specialisation and experience prescribed in respect of the above (including the particulars and precise branch of specialisation which is needed and also the preferential qualifications considered desirable) will be furnished along with the application form.

The applications received after the last date/and/or incomplete are liable to be rejected and no interim enquiries will be entertained. Separate application form is required to be submitted for each category.

Applications from employees working in any organisation will be considered only if forwarded through proper channel. However, such employees can send an advance copy to avoid delay.

Canvassing in any form will be a disqualification.

Dr. P. Venkat Reddy
I/c REGISTRAR

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

HOMI BHABHA ROAD, BOMBAY-400 005

ADVT. NO. 5/90

Invites Application for Admission as RESEARCH SCHOLARS for the year 1990-91

The Institute offers a programme of Graduate Study in several branches of Physical, Chemical and Computer Sciences. The prime objective of this programme is to train scholars in the methodology of fundamental research. The work also enables the scholar to earn a Ph.D. degree of Bombay University. Selection for the academic year 1990-91 will be made on the basis of interviews to be held at TIFR, Bombay between July 1 and July 15, 1990. The academic programme will start in the first week of August 1990.

The basic requirements for admission are exceptional talent and motivation for research. Candidates who are keen to pursue a research career and who have an outstanding academic record, need apply. Candidates should have completed Master's Degree (M. Sc., M. Tech. etc.) before joining this programme (students who have appeared for the Master's degree examination, may also apply). For Physics, candidates with Master's degree in Applied Mathematics or Astronomy may also apply. Candidates with B.E. and B. Tech. degrees may apply for Computer Science and Solid State Electronics. In exceptional cases, candidates with B.E., B. Tech. and B. Sc. degrees may be considered for other areas. For Chemical Physics, candidates with Master's degree in Chemistry, Physics or Bio-Chemistry may apply.

Admission is highly selective and during this year only a few candidates may be admitted in each of the following areas :

Theoretical Studies	: Theoretical high energy physics; nuclear theory; condensed matter theory; theoretical astrophysics.
Experimental Space Sciences	: Cosmic rays and solar physics; high energy astrophysics; gravitation.
Astronomy	: X-ray & gamma ray astronomy; optical astronomy; infrared astronomy; radio astronomy.
Experimental High Energy Physics	: High energy cosmic rays; experimental high energy physics using underground detectors, bubble chambers and high energy accelerators abroad.
Experimental Atomic and Nuclear Physics	: Nuclear interactions, heavy-ion collisions using pelletron, nuclear spectroscopy; nuclear reactions, atomic collisions.
Experimental Solid State Physics and Solid State Electronics	: Magnetism; superconductivity; low temperature physics; semiconductor physics.
Chemical Physics	: Bio-inorganic chemistry; fast reactions; energy transfer; molecular biophysics; laser spectroscopy.
Computer Sciences	: Speech and digital systems; computer communication; theoretical computer science; logic programming; programming methodology.

After completion of the programme, outstanding candidates have the possibility of absorption into the regular academic staff of the Institute.

More details about fields of study in each area will be supplied with the application form,

Financial Assistance : Research Scholars will be paid a fixed monthly honorarium of Rs. 2200/-. Based on satisfactory performance, the honorarium may be raised to Rs. 2500/- per month subsequently. Appointments are made for a year at a time but are normally renewable annually upto 5 years, subject to evidence of satisfactory performance.

Travelling Allowances : Each candidate called for interview, will be paid 1-1/3 railway fare each way by second class (not air-conditioned) and a sum of Rs. 35/- as halting allowance for the day on which he /she is interviewed.

Applications : Applications in the prescribed form which can be obtained from the Senior Administrative Officer (Establishment) on request alongwith 24 x 11 cms. self-addressed stamped (Rs. 1.40) envelope should reach the Institute not later than May 31, 1990. Requests for the application forms will be entertained only upto May 15, 1990. In the application, the candidate must clearly specify his/her area of interest.

TATA INSTITUTE OF SOCIAL SCIENCES

DEONAR, BOMBAY 400 088

VACANCY FOR A REGISTRAR

No. Admn/Advt/90 February 21, 1990

A premier all India institution with post-graduate courses in Social Work as well as Personnel Management and Industrial Relations, Ph.D. in Social Work and Social Sciences, and applied social science research, the Tata Institute of Social Sciences requires a dynamic and energetic REGISTRAR with ability to deal with educational, administrative and personnel matters. A knowledge of accounts and management of educational grants, additionally desirable.

Scale of Pay : Rs. 4500-150-5700-200-7300 plus allowances admissible at the Central Governemnt rates prevailing at the Institute from time to time. The total emoluments at the minimum of the scale at present are Rs. 6790/ per month and at the maximum of the scale are Rs. 10,006/- per month.

Housing : The Registrar is required to live on the campus for which rent free unfurnished accommodation will be available (No House Rent Allowance will be admissible).

Qualifications and Experience

Essential

1. A post-graduate degree from a recognised University with at least 55 per cent of the marks or its equivalent grade.

and

2. At least 15 years of experience as Lecturer/Reader of which 8 years should be in the Reader's grade with experience in educational administration.

OR

Comparable experience in research establishments and other institutions of higher education such as positions of Principal/Vice Principal of Colleges and quivalent posts.

OR

Fifteen years of administrative experience of which 8 years as Deputy Registrar or an equivalent post in any organisation.

Preferable : Experience in Personnel Management and related aspects of administration with a degree in management and familiarity with labour laws/ use of computers in administration.

Nature of Duties : The Registrar is expected to provide administrative support to the Director/Deputy Director, manage administration, finance, staff and legal matters of the Institute.

Age : Not above 50 years on 1st July, 1990.

Conditions for the Post : In addition to the applications that may be received in response to the advertisement, the Selection Committee may consider other candidates whose names may be suggested to it by one of the members, or by others consulted for this purpose, by the Committee.

Relaxation : In the case of candidates with outstanding record of experience and of exceptional merit, the qualifications prescribed may be relaxed at the discretion of the Governing Board of the Institute.

Procedures for Application : Applications must be made in the prescribed form which should be obtained from the above address, either in person, or by post, by sending a stamped (Rs. 2.00) self-addressed envelope superscribed "Request for application form for the post of Registrar", along with an application fee of Rs. 10/- by a Demand Draft, and the various certificates, etc , as indicated in the prescribed form. SC/ST candidates are exempted from the payment of application fee. Application on plain paper or without the application fee/certificates, as required will not be entertained. Persons in employment should apply through their employers or produce a "No Objection Certificate".

Outstation candidates called for interview will be paid a contribution towards their travel expenses.

Last date for the receipt of completed application form is **19.03.1990.**

A.S. Desai
DIRECTOR

National Law School of India University

Central College Campus, Bangalore-560 001

ADMISSION FOR 1990-91 SESSION

NLSIU, the first and the only Law University in India sponsored by the Bar Council of India, offers Legal Education in developmental context at the Under-graduate and Post-graduate levels. It is a residential University and provides Hostel facilities for boys and girls.

The University offers :

1. **B.A., LL.B. (Hons.) :** A five-year integrated Programme preparing students for the Bar and varied careers in Law.

   (a) **Eligibility :** 10+2 School examination or equivalent with not less than 50% marks; Students taking qualifying exam. in March/ April 1990 also eligible to apply.

   (b) **Age limit :** Below 20 years as on 1st July, 1990 (22 years in case of SC/ST Candidates).

   (c) Admissions are based purely on merit, based on the performance at the All India Admission Test to be held on 6th May, 1990 at Bangalore, Delhi, Bombay and Calcutta. All admissions will be completed on or before 30th June. Classes begin on **2nd July, 1990.**

2. The University also admits students for LL.M., M.Phil and LL.D Degrees. Details regarding above courses may be obtained by writing to the Registrar before **April 15, 1990**.

For Application Form and University Bulletin, write to the Registrar at the above address with a Bank Draft for Rs. 50/- payable to the NLSIU at Bangalore.

Last date for receipt of completed Applications is **21st April, 1990.**

Note : Issue of Applications will commence from 15th March, 1990.

GUJARAT UNIVERSITY

AHMEDABAD - 380 009

Applications are invited in the prescribed Form available from the Registrar, Gujarat University, Ahmedabad-380 009, so as to reach him on or before 15/3/1990 for the following posts in the various Post-graduate departments of the University :

Sl. No.	Name of the Post	No. of Post
1.	Professor of Gujarati (Third Attempt) This post is reserved for candidates belonging to Economically and Socially backward class as per Baxi Commission Report.	One
2.	Professor of Textile Chemistry	One
3.	Professor of Commerce	One
4.	Professor of Bio-chemistry	One
5.	Professor of Business Management (Seeond attempt) This post is reserved for Scheduled Caste candidates.	One
6.	Professor of Economics	One
7.	Reader in Hindi (Second attempt) This post is reserved for Scheduled Tribe candidates.	One
8.	Reader in Textile Chemistry	One
9.	Reader in Economics (Second attempt) One post is reserved for candidates belonging to Economically and Socially backward class as per Baxi Commission Report.	Two
10.	Reader in Environmental Science	One
11.	Reader in Statistics	Two
12.	Reader in Polymer Science	One
13.	Reader in Computer Science (If the candidates for these posts are not available, the post of reader will be downgraded to the Lecturer's post and the post will be filled up from the candidates possessing the qualification of Lecturer.	Three
14.	Reader in Library Science	One
15.	Reader in Physics (Second attempt) This post is reserved for candidates belonging to Economically and Socially backward class as per Baxi Commission Report.	One
16.	Reader in Law	One
17.	Reader in Life Science (Inter Disciplinary Course)	One
18.	Reader in Chemistry	Three
19.	Lecturer in Computer Science	One
20.	Lecturer in Textile Chemistry	One
21.	Lecturer in Sociology (Note : Those candidates who have already applied previously and were interviewed on 26/12/89 need not apply again. Their applications will be considered alongwith the new applications)	One
22.	Lecturer in Bio-chemistry	One
23.	Lecturer in Chemistry (One post of Organic Chemistry is reserved for Scheduled Caste candidate) (Third attempt)	Two
24.	Lecturer in Botany (One post is reserved for Scheduled Tribes candidates) (Second Attempt)	Two
25.	Lecturer in Labour Welfare	One
26.	Lecturer in Journalism	One
27.	Lecturer in English (Note : Those candidates who have already applied previously and were interviewed on 25/12/89 need not apply again).	One
28.	Lecturer in Political Science (One post is reserved for candidates belonging to Economically and Socially backward class as per Baxi Commission Report) (First attempt).	Two
29.	Lecturer in Linguistics	One
30.	Lecturer in Polymer Science	One
31.	Lecturer in Physical Education	One
32.	Lecturer in Zoology (Note : One post is for DSA scheme and the other post is reserved for candidates belonging to Economically and Socially backward class as per Baxi Commission Report) (Second Attempt)	Two
33.	Teaching Research Associate (Lecturer's scale)	Two
34.	Lecturer in Environmental Science	One

Pay Scales 1. Professor : Rs. 4500-150-5700-200-7300

2. Reader : Rs. 3700-125-4950-150-5700

3. Lecturer & Teaching Research Associate : Rs. 2200-75-2800-100-4000

A copy of the rules governing minimum qualification can be obtained on request.

The above posts carry Dearness Allowance and other allowances as per rules of Gujarat University. The benefits of General Provident Fund, Gratuity and Pension will be admissible as per the rules of the University in force from time to time. The candidates selected for the above posts except Professor of Gujarati shall have to learn Gujarati language during the period of Probation. The initial gross monthly emoluments on the minimum salary in the scale for Professor, Reader and Lecturer will be approximately Rs. 6790/-, Rs. 5750/- and Rs. 3498/- respectively.

Residential quarters may be provided on request subject to the availability.

The prescribed form of application can be had on payment of Rs. 5/- payable in advance either in cash or by Postal Order. Money Order will not be accepted.

M.P. Jadia
Offg. REGISTRAR

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N.B. : Articles and Book Reviews are welcome.

Koli Folk Dance performed by Shivaji University students at the Inter-University National Youth Festival held at the University of Roorkee

ASSOCIATION OF INDIAN UNIVERSITIES NEW DELHI

Representatives of the Universities that participated in the IX New Delhi World Book Fair under aegis of the AIU with Prof. S.K. Agrawala (fourth from left), Secretary, AIU.

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University News

MONDAY, MARCH 12, 1990 Rs. 2.50

YOUNG SCIENTISTS AWARDS

Recipients of the Indian Science Congress Association's Young Scientists Awards 1990

International Institute For Population Sciences

Govandi Station Road, Deonar, Bombay-400 088

ADMISSION NOTICE

Applications are invited for admission to the following teaching programmes of the Institute for the academic session 1990-91 to commence from 2nd July, 1990.

1. MPS (Master of Population Studies)
   (one year full time course)
2. M. Phil. (Master of Philosophy in Population Studies)
   (one year full time course)

Selection will be made through interview or other methods as decided by admission committee.

Eligibility

1. **For MPS :** Master's degree of a recognised University in any of the following subjects : Statistics, Mathematics, Economics, Sociology, Anthropology, Psychology, Geography.

OR

Master's degree in subjects other than mentioned above with some experience in population or allied field.

2. **For M. Phil :** (i) Master's degree in Population Studies from the Institute or an equivalent degree from any other university with at least 55 per cent marks in the aggregate.

OR

(ii) Certificate/Diploma in Population Studies/Demography from the Institute with at least 55 per cent marks in the aggregate and a Master's degree in the relevant subject.

Those who have been offered M. Phil/Ph. D. fellowship by UGC/ICSSR etc., for a period of at least 2 years, may be admitted directly. They will, however, be required to obtain the M.P.S. degree of the institute within one year with a minimum of 55 per cent marks in the aggregate.

Fellowships

Total for M.P.S. and M. Phil : Twenty fellowships @ Rs. 500/- p.m.

Those appearing at the qualifying examinations also may apply. However, the selected candidates have to produce the results of the qualifying examination at the time of interview.

Three seats are reserved for Scheduled Caste and one for Scheduled Tribe candidates.

Application forms can be obtained from the Office of the Assistant Registrar, International Institute for Population Sciences, Deonar, Bombay-400 088 free of cost. The request for application form should accompany a self-addressed envelope of size 25 x 12 cms. affixed with postage stamp of Rs. 3.40.

The envelope should be superscribed "APPLICATION FOR ADMISSION"

The last date for receipt of completed application form is **20th April, 1990.**

K. Srinivasan
DIRECTOR

UNIVERSITY NEWS

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Editor :
SUTINDER SINGH

Academic Staff Colleges

A REVIEW

(Ms) P. Rebeiro*

Academic Staff Colleges (ASCs) that have beens in existence for the last two years must have experienced a sense of frustration as well as satisfaction while conducting their programmes. Besides the normal administrative problems (lack of accommodation, etc.) that any new scheme's implementation faces, there are more serious academic problems that need to be looked into. if a semblance of satisfaction is to be derived from these programmes. One would have to grant that Satya Pal Ruhela's suspicions and fears (*University News*, 10 August 1987), were not only genuine, but that in spite of warnings, University authorities have done precious little to implement the scheme properly.

The area that needs most urgent attention is the syllabus, both for the specialized courses as well as for the general orientation course. And while the organizers need to keep in mind that the participants are serious about what they are undertaking as they require the Certificates for their promotions, they should not frustrate their expectations by taking lightly their (participants') lack of investment or passive participation. Understandably, UGC has envisaged systematic evaluation of the scheme on the basis of questionnaires collected and presently deposited with the UGC. It will be some time before the data is analysed and some evaluation is made. Besides, experience of faculty interacting with the participants at a very personal level has been such that not all that is put in the responses is reliable. A very small percentage of participants are 'brutally' frank to write what they felt. Most of them tend to be extremely charitable to the institution hosting them.

Another aspect which needs to be kept in mind is a peculiar psychology of some (significantly small percentage) participants who have a tendency to believe that everything that is discussed is known to them. And a significantly large number of participants tend to appreciate what is known to them as the most important or interesting content of the discussions.

Keeping in mind the above tendencies, I wish to suggest certain modifications in the course content of Orientation Courses with a view to enhancing the results of the programme and at the same time ensuring psychological satisfaction of the participants.

Component A

The contents of Component A should be so designed as to allow the participants themselves to contribute towards the discussion. Pure theory or statistical figures doled out to the participants do not form an effective mode of dissemination of information or making the young teachers conscious of the issues facing the nation. As the levels of discussion will vary from the type of participant group (science or social science, for instance), the component should best be used for discussion sessions, wherein participants themselves present papers/notes on the various themes. Educative films, review of standard books on the subjects could form the core of the discussions. Negatively speaking, lecture sessions on these often discussed themes could lead to a serious crisis of boredom.

**Academic Staff College, Goa University, Bambolim, P.O. Santa Cruz, Goa-403 005*

Component B

This component should form the main thrust of the Orientation Programme. Specific reading material by way of books, journals and workshop material must be made available to them. The component should be divided into three to four parts and each part should be handled by one specific instructor. A form of evaluation at the end of the Component is sufficient by way of programme evaluation as this component is primarily meant to train the teachers/ or teachers-to-be in the art of teaching-learning.

Part A : Philosophy of Education and Indian Educational System.

Part B : Psychology of Education.

Part C : Teaching Methodology.

Part A should consist of five to six lectures dealing with the principles of education, the philosophy behind it, the models of education in East and West classical Indian system of education, structure of present educational system in India, the economies of education, non-formal education, and objectives of higher education.

Part B should consist of five to six lectures oriented to equip the participants with psychological understanding of the processes of learning of education. It should consist of discussions on intelligence, motivation, memory, learning, logical thinking, group behaviour, etc.

Part C should consist of about ten lectures and content should be such that the participant is able to improve his/her performance in the classroom as an effective teacher. The lectures and discussion (workshop method) should be around the following themes: Teaching methodology : Types of lessons, methods of teaching, planning lectures, skills in teaching, microteaching ; Evaluation Methodology : Concept of measurement, types of measurement and evaluation; Classroom Techniques : presentation, lecture, use of appropriate aids, educational technology; and Reference and study skills.

Component C

Subject upgradation is a component which requires more serious consideration in the light of subject specific courses conducted by the ASCs elsewhere. But keeping in mind the age-group participating in the Orientation Courses, some component specific to the subject is imperative. And this component should be oriented towards research methodology or development of finer techniques of research. The resource persons in this part of the programme should help the participants look for topics for research (either for Ph D. programme or otherwise), work towards methodology, etc. This will help the participants begin thinking about their work for higher degrees, papers, etc. (The task of advancement of subject knowledge is expected in a refresher course, rather than in orientation courses meant for fresh recruits to the profession).

Component D

And finally, the contents of component D need to be reviewed in the light of present experience. Some of the component contents of the Component D are indeed necessary and useful for a lecturer, and some are redundant. These few redundant topics when emphasized tend to reflect negatively on the entire course. Hence they should be altogether dropped. Those issues (topics) which are necessary have already been included in Components B and C. For instance, Logical thinking, Speech Training, Communication skills, etc. form part of the Component C. And Logical thinking, Group Behaviour, Student Counselling, etc. form part of Component B.

Evaluation

The seriousness of the programme lies in its evaluation. Efforts should be made to evaluate the programme at all levels including evaluation of participants in terms of their achievement. In view of a systematic evaluation, the participants should be informed before they join the programme about the method of evaluation so that they are prepared to show certain level of achievement. The participants should be requested to identify one or two topics they would like to present for 'participants' session'. These participant sessions should be used to evaluate implementation/results of techniques learned in Component C. Evaluation on specific proformas should be done both by the participants and the ASC staff, and the participant given confidential feedback on the basis of his performance. The last week of the programme, should be used for evaluation. This will help the participants to use meaningfully their spare time to prepare the theme of their presentation and also use the techniques/methods of teaching they have learned during the course of the programme. ☐

Criteria for Excellence in Research

J.N. Kapur*

Introduction

We take it as axiomatic that every research scholar, every department and every institution should strive for excellence in research. For attaining excellence, the first step is that one should analyse carefully what excellence in research means, what the accepted criteria for excellence are and how it is measured by the academic community. In the absence of the awareness of these criteria, one may not even be striving for excellence.

It is surprising that many research scholars, including sometimes senior university professors, are not conscious of these criteria. In the absence of this conscious awareness, one may continue to do mediocre research and one may not even be aware of it. Every individual and every institution should assess both the quality and quantity of its research and should make efforts to improve both quality and quantity. In the absence of criteria for excellence, we may concentrate on only improving the quantity and quite often this may be done at the cost of quality.

Individual research is assessed when an individual is considered for promotion for a reader's or a professor's post or to a scientist's C, D, E post or for election to fellowship of National Academy of Sciences or Indian Academy of Sciences or Indian National Science Academy or UGC national lecturership or for Bhatnagar award or FICCI award or for awards and medals given by academic bodies or when an individual applies for a research grant. Department research is assessed when a department is considered for giving it status of a department of special assistance or of a centre of advanced study by the UGC or when it has to receive large grants from grant-giving agencies. Of course departments are being constantly assessed by prospective Ph.D. students and faculty members and other persons. In other countries, very often departments are assessed critically even for accreditation purposes. Sometimes departments and institutions get their research work assessed by outside agencies in their own interest.

When some criteria for excellence are pointed out to an individual or a group, the reaction sometimes is, "We were not aware of these criteria, otherwise we could have tried to meet these criteria. The major criterion which was given to us was the number of papers and we have tried to increase the number of papers. Sometimes we were asked how many papers we had published in foreign journals and so we tried to publish some papers in foreign journals, without worrying about the standards of these journals". In fact university forms ask only for this information : number of papers published in Indian and foreign journals.

We cannot blame our research scholars if we set low and misleading targets for them. We should lay down clear, unambigous and highest possible targets for them, so that they put in their best.

The object of the present paper is to highlight some positive criteria for excellence.

Need for Criteria

Before coming to the criteria, here are some remarks made to me which point out some criteria as well as need for criteria.

— "Prof. Kapur, during the last fifty years, I have published about fifty papers, I have guided 10 Ph.D. theses and I have got some recognition, but in retrospect, I am a disillusioned person. Almost all my papers are already forgotten; I do not believe I have created any impact. The only beneficiaries of my research have been myself and my students and we have also benefited only economically and not intellectually. If I were to start life again, I would look at research in a different perspective, but it is too late now".

— "You have asked me about my best paper. All my papers are equally good. There is nothing special about any paper."

— "You have asked me as to who is the best research worker in my field in India. I have just completed my Ph.D. I am too small a person to judge the merits of the work of professors."

— "When I read a paper, I only check whether the result proved is right. Very often I even assume that it must be so. I have never given any thought to whether the results proved are inter-

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*Mathematical Sciences Trust Society,
C-766, New Friends Colony, New Delhi-110065.

esting or exciting or can lead to further work or not."

- "In my department I only count the number of papers published by each faculty member. I do not care to know in which journals they are published."
- "In our department, we have published a large number of papers and produced a large number of Ph.D's. None of the faculty members has won a national or international distinction or award. Honestly speaking, we are not aware of any such honours which we could have tried to win."

First Criterion : Papers and Books Published

In general, published papers may provide the most important means of assessing the quantity and quality of research done by an individual. However this criterion can be divided into a number of sub-criteria.

(*i*) *Number of papers published*: This is sometimes taken as the main criterion but taken by itself, it is of doubtful value for a number of reasons; the most important of which is the large possible variation in quality of papers. There is a slogan, "Publish or Perish" due to which many persons publish a large number of papers without worrying about the quality, since they know that for any evaluation of research, it is much easier to count the number of papers than to evaluate the quality of research. There is also a counter slogan 'Publish and Perish' which is used in two different senses. According to one sense, if everybody publishes too much, there will be so much published research of indifferent quality that quality research papers may be submerged by worthless papers and it may require a lot of energy to find really good papers. As such it is urged that every one should use some 'self-control' in matters of publication. There is another sense in which the slogan is used. If a person publishes a large number of papers, some persons consider it as a disqualification for him. I have often heard the sentence, "Prof. Kapur, this man has published fifteen papers in a year, he has engaged in mass production, he has opened a factory. We need not even look at his papers. They must be trash." This comment is made sometimes by persons who are themselves doing first-rate research, who publish only one or two papers in a year, but who are deeply involved almost day and night with the problems they are trying to solve. However, this comment is made quite often by persons who spend most of their time in meetings and parties, who do not spend more than two hours a week in research, but who survive on the basis of their past research or their association with great researchers abroad. The research output does depend on the time spent on research and on the emotional and intellectual involvement in the work. It is sometimes surprising if a person produces fifteen papers in a year by working one hour a day. However, there is nothing surprising if a person produces fifteen papers in a year by working for fifteen hours a day.

There is a feeling that some researchers play a 'number game' by breaking up a single paper into a number of papers and thus increasing their number of papers in an artificial manner and even unethical manner. This is not always the case. What happens is that a research scholar gets an idea, publishes a paper and then a chain of ideas come in quick succession, but not simultaneously and the researcher goes on publishing papers as the ideas go on coming. Persons who see these papers after five or six years feel that the papers could have been combined into one paper. This is the result of hindsight and not of foresight. It is even argued that a person who gets an idea should not publish a paper on it till he has worked out all its consequences and may wait even for a few years before publishing it. This advice is not usually accepted for a number of reasons. Usually the person who publishes may have a feeling that he has obtained all possible results and the remaining problems are too difficult to handle. However he continues to think and after some time he sees light and publishes new results. The researcher wants to see whether his idea is accepted. If for some reason it is not accepted, he may not want to continue work on it. He also wants to publish because in these days of stiff competition, he wants to establish his priority in the matter. On the frontiers of research, a large number of persons all over the world are thinking about the same problem and every research worker is anxious to communicate his results to others. It also happens that a researcher gets a large number of results and can write a paper of sixty to eighty pages. There are very few journals which publish papers of this length. As such in such a case, the author is obliged to break up his paper into a number of papers. The thought of increasing the number of papers may not be there at all in his mind.

While the number of papers may not be a reliable criterion, the absence of publications is a more reliable criterion of inactivity in research. A person who claims, "I do not believe in publishing a large number of papers; I have published only two papers and they are good" has to be examined carefully. Both the statements "One hundred and fifty papers have been published in ten years and therefore these must be trash" and "Only two papers have been published in ten years and therefore these must be good" have to be taken with a pinch of salt. We have to go deeper into the quality of papers, whether two or one hundred and fifty. This may be a difficult task, but for honest assessment of research, this has to be done. We now address ourselves to this question.

(ii) *Number of papers published in Indian and foreign journals :* This is an unfortunate criterion which is very often used and the sooner it is given up, the better it would be for our research. For one, it gives the impression that our journals are inferior to foreign journals and has thus a demoralising effect.

Some of our Indian journals are excellent and maintain very high standards. On the other hand, some of the foreign journals in which it is relatively easy to publish do not have the same standards. The weakness of our journals is not so much in low standards, but it is in low circulation. European and American journals have much higher and worldwide circulation and as such papers published are taken note of by larger number of academic researchers. It is therefore desirable that some papers should be published in these journals. However, most of these high circulation journals have very great demands on them. The papers submitted from India also receive a low priority from them, not because of low quality of research but because of low quality of typing and even of paper. In these days of laser printing, most of our papers typed on poor quality paper with manual typewriters (and this is all what most of our research workers can afford) look quite shabby. The university vice-chancellors who want to see papers published in foreign journals should at least give funds and facilities for first rate typing to all the research scholars and teachers. All efforts should also be made to increase the circulation of our journals.

(iii) *Number of papers published in journals with strong referencing system* : Some journals have a policy of having at least two independent referees and they take care to choose these from experts in the narrow field of the paper, whether these referees are from within the country or outside. In these cases, the standards will be high if the referees are objectively chosen and papers published in such journals, Indian or foreign, should be given a high weightage.

Some journals have a policy of having only one referee. Some journals have internal referees or nominal refereeing. In some cases the referees are not selected carefully and any professor, whatever his specialisation, is supposed to be good enough to referee any paper. In such cases, the standards are low and papers in such journals have to be given relatively low weightage. In case there is no refereeing, the papers may be left out of consideration all together.

(iv) *Papers published in proceedings of conferences* : Again there are two types of proceedings. In one case all papers which are presented are published without being referred. In the other case, papers are published but only after being duly accepted by competent referees. Obviously papers published in refereed proceedings have to be given higher weightage.

(v) *Papers presented in conferences and published as working papers or technical reports* : These can be given some temporary significance, because if these are of some significance, these should be published in recognised journals in two or three years time.

(vi) *Number of papers reviewed in reviewing or abstracting journals* : Most abstracting journals give abstracts of papers, but some give reviews. If some detailed reviews are there, favourable or otherwise, these may be taken into account.

(vii) *Number of papers written in collaboration with others* : If a paper is written by k authors, each author can fairly claim credit for 1/k of the paper. Unless this factor is taken into account, some authors can artificially increase the number of their papers by entering into an informal agreement with other authors, by which they discuss each other's papers before they are sent for publication and the names of all the members of the group are written on each paper, though in each paper only one member may have made a significant contribution.

(viii) *Number of citations of papers by other authors* : Some papers are cited by a large number of authors in their research papers and books, some are cited by the author and his colleagues only and some are forgotten immediately after they are published. A paper may be given a citation weight equal to 1+

n/10+m/20, where n is the number of times it is cited by others and m is the number of times it is cited by the author and his colleagues.

(ix) *Net number of papers published* : To calculate this number multiply its citation weight by its journal weight and divide by the number of authors and add for all papers, where the journal weight of the paper is four if it is published in a strongly refereed journal, two if it is published in a not-so-strictly-refereed journal, one if it is published in a non-refereed journal or in a conference proceedings but is reviewed in a reviewing journal and zero if it is published in a non-refereed journal and is not even reviewed.

(x) *Number of patents registered* : In some technological fields, this can be an important criterion.

(xi) *Books published* : Here we consider good quality postgraduate level textbooks specially books for new courses, survey articles, chapters in scholarly books and research monographs. These show the quality of mind as well as the power of exposition and synthesis of the researcher.

(xii) *Peer review* : Five to ten of the papers considered best by the researcher may be sent to specialists in the field and their opinions about the quality of work may be obtained. These referees must know the subject well and should be chosen out of a list provided by the reseacher himself and out of the list of authors to whose work the author has himself referred in his papers. They must be as unbiased as possible. This process is time consuming, but is quite reliable.

Second Criterion : Research Leadership

While recognition of individual research work is very important, recognition of capacity for inspiring leadership in research is equally important.

(i) *Number of Ph.D. theses guided* : This used to be an important criterion, but in recent times, just like the number of papers criterion, it has become devalued due to its misuse by a number of persons. In fact if a supervisor can manage to get convenient examiners appointed, he can produce any number of Ph.Ds. I recently came across a case where a professor had produced fifteen Ph.Ds, but not a single paper had resulted from these theses. However, the number of Ph.Ds produced from those universities which maintain good standards is still a reliable criterion.

(ii) *Number of papers published in refereed research journals resulting from Ph.D. theses and the number of Ph.D. students who continue to do active post-doctoral research :* These are in fact more reliable criteria than the criterion of number of Ph.Ds produced.

(iii) *The degree of collaboration of members of the group and the existence of a focal theme for research* : Sometimes different students of a leader work on different problems and nobody knows what others are doing and every student finds his own problems. In some cases, there is a focal theme for research of the group and different members choose different aspects of this theme and the work of each member supplements the work of each member. The leader has a clear vision and each member is inspired by this vision for truth in a special field.

(iv) *Research grants received* : If a research group does good research, it can attract good research grants from various funding agencies and if good research grants can be attracted, a good research group can be built up. A good research leader has a double challenge. He has to manage grants for his group and at the same time, he has to continue to provide inspiring leadership to his team. Many a time a research leader becomes just a grant-getter and loses touch with research. His colleagues like him for getting money for their research, but they lose respect for his research leadership. This leads to superficial research and depth in research becomes a casualty. A research leader should spend at least 80% of his time in his laboratory or his work place.

(v) *Ethical standards set* : A research team leader has to set high moral and ethical standards for his team. He should be the hardest working member of his team. He should refuse to be the author of any paper to which he has not contributed significantly. He should be completely fair and every member of his team should know that the only way of making him happy is by doing first rate research. While he should be proud of the achievements of his group, he should not make any false or exaggrated claims. He should see that no experimental results are reported unless these are carefully checked and rechecked.

Third Criterion : National and International Recognition

(a) *National recognition* :

This recognition is indicated by the following :

(i) Election to fellowship of National Academy of Sciences, Indian Academy of Sciences, Indian National Science Academy (INSA) or similar academies of Arts, Social Sciences and Humanities;

(ii) Invitation to give national lectures from the University Grants Commission (UGC), Council for Scientific and Industrial Research (CSIR), Indian Science Congress Association (ISCA) etc.;

(iii) Winning of Bhatnagar, Hari Om, FICCI and other similar awards;

(iv) Winning of other medals, awards, national professorships given by CSIR, INSA, ISCA, SAHITYA ACADEMY and other professional bodies;

(v) Membership of committees for selecting fellows and for giving other awards;

(vi) Invitation to give lectures in universities, conferences of professional bodies, national level seminars and symposia, workshops;

(vii) Offices held in national level societies;

(viii) Membership of editorial boards of high quality journals:

(ix) Membership of grant-giving agencies or their committees;

(x) Invitations for visiting professorships;

(xi) Membership of committees set up by UGC/National Council of Educational Research and Training (NCERT)/Department of Science and Technology (DST)/Defence Research and Development Organisation (DRDO)/Academies etc; and

(xi) National awards like Padma Vibhushan, etc.

(b) *International Recognition*

This recognition is indicated by the following :

(i) Membership of international societies and offices held there;

(ii) Invitation to give lectures in international conferences and symposia;

(iii) Invitation to work as visiting professors in foreign countries;

(iv) Membership of editorial boards of international journals;

(v) Fellowships of Academies of other countries; and

(vi) Honours and awards given by academic bodies of other countries.

There is a feeling in some quarters that the awards and honours are not always given on merit, but one's contacts and one's position make a great contribution. This only means that greater weightage is to be given to those awards and distinctions in the case of persons who do not have these contacts and position. Also any significant differences in the results of first, second and third criteria have to be noted.

There is also a Mathews effect operating in this case that a person who has got some award is likely to get more awards than a person who has got no awards so far.

Excellence in Research of Departments and Institutions

The excellence in research of a department or institution is measured by considering the achievements of all its members. We consider the quantity and quality of papers and advance level books published, the impact of their research in the world, the honours and distinctions won by all its members and the outstanding research workers and research groups it has produced.

Usually every good department or institution builds up traditions, due to which the morale of all the members is high. A department is good if there is an excellent academic climate, if individual research workers have faith in themselves and their colleagues and if they are ambitious and if it has excellent leadership.

A good department should attract good students and research scholars from all over the country and even from all over the world. Its leadership has to be very jealous of its standards and should not allow any pressures to influence its admission of students or recruitment of faculty.

If any person, however, important, can even think of making a recommendation for a post in an institution, it implies that the institution is far from excellent.

Concluding Remarks

(i) Many eminent scientists and academicians have expressed their concern at the lack of excellence in many of our institutions. One main reason is that we have not tried to spell out what we mean by excellence in detail and we have not really set the goal of excellence before our researchers. This position suits the vested interests in our society very well

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Curriculum Development in the Andhra University

M.R. Rao*

The Action Committee on Higher Education felt that "Higher Education Programmes have to be redesigned to meet the growing demands of specialisation, to provide flexibility in the combination of courses, to fecilitate mobility among courses, programmes and institutions, to update and modernise curricula, to integrate work/practical experience and participation in creative activities with the learning processes, and to facilitate reforms in the evaluation procedure".

The central theme of the above statement is "Curriculum Development". In this paper, an attempt is made to examine and analyse the curriculum development in Andra University.

The University Grants Commission (UGG) issued guidelines for the structuring of courses at the first degree level and also suggested various combinations in science and arts courses for the Universities in 1982. It suggested one application-oriented course along with basic subjects in Sciences and Arts. The philosophy and merit of the application-oriented course is to enable the student to apply his theoretical knowledge to the practical problems of the region through field work, project work, extension work, etc. The application-oriented course is a blend of 'academic' and 'applied' components. The guiding principle in selecting the application-oriented course is "relevancy". High priority should be given to the rural application-oriented courses at the first degree level in Sciences and Arts. The principle of "relevancy" is restricted to the needs of the community living in the locality/region where the college is situated. The prerequisite for the introduction of applied course is the survey of the needs of the locality/region where the college is located and where the needs of the community may differ from place to place. Therefore, the principle of "flexibility" becomes essential in the introduction of applied courses. The UGC has suggested that the application-oriented course may be experimented in 'continuing education' to assess its impact and usefulness in the first instance. If its result is positive, it can be introduced for restructuring of courses.

The Introduction of Applied Courses

The Andhra University appointed a committee headed by Prof. R. Ramanadham in early 1982 to examine various issues in introducing restructured courses at the undergraduate level in selected affiliated colleges. The Committee felt that the new applied courses should not be terminal. But the students taking this course must have the option either to take up a job after graduation or with the applied bias he acquired at graduate level, go along with the mainstream if he qualified himself for higher studies. Further it recommended that the applied course should enjoy equal status with the main subject; in other words, it recommended three optional subjects of equal importance instead of one main and two ancillaries. But the Standing Committee of the Academic Council (4.6.83) while accepting the Report of Prof. Ramanadham only partially suggested one of the two ancillaries to be an applied course instead of the prevailing set up of one main and two ancillary theory courses. The University experimented with their applied courses as one of the two ancillaries for four academic years, i.e., from 1983-84 to 1986-87, instead of offering these courses as part of the continuing education. It identified the applied course as a terminal course.

The Concept of Common Core Curriculum

The Challenge of Education : A Policy Perspective (1985) draws attention to the need for a "Common Core Curriculum to strengthen unity within diversity and to facilitate mobility from one part of the country to another". The then Andhra Pradesh Commissionerate of Higher Education convened a meeting of Vice-Chancellors, Principals and Deans of Faculties, Representatives of Teacher Associations, etc. and discussed the pros and cons of Common Core Curriculum at the Undergraduate level within the State. It resolved to adopt the Common Core Curriculum for the undergraduate courses in all the Universities in the State from the academic year 1987-88.

**Dean of Collegiate Education,*
Andhra University, Visakhapatnam.

While framing the curriculum, it took into consideration the U.G.C. Revised Guidelines on Structuring of Courses and Regulations for the Minimum Standards of Instruction for the grant of first degree through formal education. The guidelines are : (a) Part-I is a foundation course consisting of languages and the new subjects 'Indian Heritage & Culture' and 'Science & Civilisation' : (b) Part-II is a group combination of three equal optionals; (c) Part-I foundation course will be taught in the first and second years and Part-II group subjects in all the three years: (d) in the groups there are in all four papers in each subject and one paper each in the first and the second years and two papers in the third year. There are regional variations within the State and the Paper-IV should be relevant to the region/area. That is the reason why Paper-IV is an elective and application-oriented paper. (e) The work load on student is not more than 30 clock hours per week as per the regulation of Minimum Standards of Instruction for the first degree; (f) the framing/designing of curriculum for the restructured course is left to the individual universities in the State.

Structural Changes in the Core Curriculum

The Conference entrusted framing of curriculum for each subject to the concerned specialists drawn from all the universities in the State. It recommended three equal optional subjects in the group under Part-II.

Prior to the introduction of the common core curriculum with three equal optional subjects, the Andhra University had one main and two ancillary subjects for B.A. and B.Sc., but the student had no choice of different postgraduate courses except in the one he had taken as main in B.Sc./B.A. The ancillary subjects were not taken into consideration for admission into postgraduate courses. This is the main reason for the abolition of one main and two ancillary courses.

Further it recommended one stream of pass course only in all the faculties (B.A/B Com/B.Sc.). The UGC Curriculum Development Centre in Chemistry (Jaipur) has suggested two streams at the undergraduate level. One is B.Sc. (Pass) and the other is Honours course for those opting for academics/research. It designed B.Sc. (Pass) on the principle of three equal optional subjects in the group. The duration and core content are the same for the B.Sc. and B.Sc. (Hons.). But a number of special units are suggested for Honours in addition to the core at the cost of one subsidiary subject in the second and third years. When duration and core content are the same in the B.Sc. and B.Sc. (Hons.), offering two streams at the undergraduate level may result in psycho-academic segmentation. The student of Honours degree feels that his degree is superior to pass degree and he has a definite edge over the pass degree holder in the employment market.

Prior to the introduction of the three-year degree, the Andhra University had an Honours degree which was awarded on completion of three-year course after the eleven years of schooling and two year intermediate. The Honours degree holders were equated with the Master's degree holders for the purpose of teaching. The duration and content were different when compared to the general B.A./B.Sc. degree. The University abolished Honours course with the introduction of 3-year pass degree at the instance of UGC.

Similarly, the Curriculum Development Centre in Commerce has suggested B.Com. (Honours) and B.Com (Professional). Simply by designating B.Com. (Professional) the Degree cannot become professional such as Law, Engineering or Medicine. The problem of professional teaching is one of content as well as method. The University Education Commission commented on Commerce Education "that the training which our Universities give is not a professional one, but it is pre-professional education which makes the student conversant with the general lines of many kinds of business; it is for him to choose his profession after he has received this preliminary education". The Andhra University, however, has adopted only one stream at the undergraduate level, i.e , B.A., B.Sc., B.Com. and B.Sc. (Home Science). A similar pattern is in vogue throughout Southern India.

Alignment of Subjects in the Group Combination

The traditional combination of subjects such as Mathematics, Physics and Chemistry; Chemistry, Botany and Zoology in the Sciences and History, Economics and Politics in the Social Sciences are still predominant at the Undergraduate level in Andhra University. The UGC's suggestion of introducing application-oriented subjects along with basic subjects created academic interest in the alignment of subjects in the group combinations. In Physical Sciences following combinations are suggested: Physics, Mathematics along with subjects such as Instrumentation/Communication/ Metallurgy / Electronics / Solid State Sciences / Computer Science / Environmental Physics/Meteorology.

The Andhra University has approved three combinations in the above set, which are (1) Methematics, Physics and Electronics, (2) Mathematics, Physics and Computer Science, and (3) Mathematics, Physics and Instrumentation. The course content of application-oriented subjects should be in context with basic subjects. The curriculum developers of Computer Science in Andhra University have suggested different curriculum for B.A. (Mathematics, Economics and Computer Applications) compared to the B.Sc. (Mathematics, Physics and Computer Science). Similarly, B.A. Mathematics curriculum is different from B.Sc. Mathematics.

Another set of suggested combinations in Biological Sciences are Botany, Zoology with Plant Protection/Plant and Crop Genetics/Storage and Warehousing/System Ecology and Resources Documentation/ Mangrove Ecology / Fisheries / Aquaculture/Apiculture / Sericulture / Wildlife Biology / Environmental Biology/Population Biology, etc. The subject Fisheries is highly relevant to the Godavari region of Andhra University.

The Andhra University has considered the UGC suggested combination of subjects, i.e. Botany, Zoology and Fisheries and suggested Chemistry instead of Botany as an appropriate subject for the alignment with Zoology and Fisheries. But the student of this combination is not eligible for admission into M.Sc. Organic/Inorganic/Analytical/Physical/Nuclear Chemistry, etc., even though the Chemistry curriculum of this combination is absolutely the same as Chemistry with Physics and Mathematics. There is a strong notion among the academicians that the student of M.Sc. Chemistry should have Mathematics knowledge at the undergraduate level. The Curriculum Development Centre in Chemistry (Jaipur) has suggested a compulsory course in (i) Mathematics and (ii) Chemistry of life at the M.Sc. courses in various branches of Chemistry for those students who are not exposed to these in their regular undergraduate curriculum. This is an excellent alternative for the non-mathematics Chemistry Student to enter into Postgraduate Chemistry Courses.

The UGC has suggested various sets of combinations/subjects in the Arts. The major combination consist of Economics, Commerce and an application-oriented subject such as Marketing/Agricultural Marketing/Cooperative Management/Farm Management/Management Studies/Insurance/Acturial Sciences, etc. The Andhra University has approved Economics, Commerce and Management Studies/Farm Management as one of the restructured course (combinations) in the Arts. The student of this combination is not eligible for admission into M.Com. and the pre-requisite for admission into the M.Com. is still B.Com.

The alignment of subjects is very important for two reasons: (a) the course content of each subject should be determined on the basis of alignment, (b) the pre-requisites for admission into Postgraduate course partly depends upon the nature of alignment of subjects.

Designing Curriculum by Objectives

The objectives of teaching and learning have to be kept in mind while framing and reframing the curriculum. Curriculum developers should have clear-cut, well defined goals or objectives which determine the structure of a curriculum. The Standards Committee felt that "A statement of objectives will help both teachers and students to realise what the aims of teaching and learning are in a particular subject and at a particular level". Well defined objectives will help the decision makers in determining the nature and organisation of components of curriculum.

The framers of the Common Core Curriculum in Andhra Pradesh have not defined objectives for each course. Under the Common Core Curriculum, the foundation courses are compulsory for all the degree students. The broad objective of introduction of foundation courses as per the UGC guidelines is to create greater awareness of one-self and of the social, cultural and natural environment. It suggested a language, including English, as one of the foundation courses with the objective of developing communication skills among the students. It also specifically mentioned the objective of teaching the course is to enable the students to use and organise words clearly and effectively to make their thinking precise and accurate.

St. Joseph's College for Women (Autonomous), Waltair, which is affiliated to the Andhra University, has stated that the objectives of general English (compulsory) course is to develop communication skills of reading, writing, listening and speaking. The curriculum is also designed to achieve the above objective. The Curriculum Development Centre in

English (C.I.E. & F.L. Hyderabad) has done a good job in defining the objectives of general and special English at the undergraduate level.

But the Curriculum Development Centre in Chemistry has not defined the objectives of teaching at the undergraduate & postgraduate level. However, it mentioned that actual framing of syllabus should be a *de novo* exercise primarily based on the requirements for training a good Chemist. Perhaps the broad objective of Chemistry teaching is preparing a student to be a good chemist. This may be a broad objective of Chemistry course, but what should be the objectives of Chemistry teaching ?

The Committee on Standards of University Education has given an illustrative list of objectives for the teaching of Chemistry at the undergraduate level. Some of these objectives are :

> "The students can understand the inter-relationships between various branches of Chemistry".
>
> "The students will be aware of the impact of discoveries in Chemistry on related fields such as Physics, Biology, Medicine, etc."
>
> "The student will develop the ability to present and interpret chemistry research and findings in a clear and meaningful form".
>
> "The student will understand the impact of discoveries in Chemistry on the soil structure and economic life and conditions of the people".
>
> "The students will develop the ability to analyse and understand the social and industrial problems in which science is involved".

In view of recent advancements in the science of Chemistry, the above objectives of teaching are highly appropriate.

There is a general impression that no serious attempt is made to evaluate syllabi in the light of modern developments. The specialists of Common Core Syllabus have incorporated new areas of developments in every course of study. For example, in the Physics curriculum, Modern Physics is introduced as Paper IV. The Modern Physics consists of topics such as Quantum Mechanics, Atomic Physics, Solid State Physics, Special Theory of Relativity, Nuclear Physics and Elementary Particle Physics. The State Level Experts have rationalised and modernised the undergraduate level curriculum of different subjects. It is true that the framers of Common Core Curriculum have not taken into consideration the competency of teachers for imparting instruction in the new areas and Physical equipment required for conducting lab work etc. If these factors had been taken into consideration, they might have acted as constraints in updating the syllabi. It has prepared blueprints of curriculum objectively without being influenced by the above constraints. As mentioned earlier, designing the curriculum of restructured courses was left to the individual universities, which entrusted the task to the concerned Postgraduate Boards of Studies, since it was felt that there is no expertise at the Undergraduate Board of Studies.

Finally, the Common Core Curriculum for the whole State provided an excellent opportunity for the rationalisation and modernisation of different courses of all the universities in the State.

Adoption of Common Core Curriculum

Generally the major functions of the Board of Studies in any University/Autonomous College are: (i) to prepare syllabi for various courses, and (ii) to suggest methodologies for innovative teaching and evaluation techniques. When a university placed the externally developed Common Core Curriculum in the concerned Board of Studies for its approval, there was a feeling that the right of preparation of syllabi was taken away from the Board of Studies. Added to this, the switching over from the system of one main and two ancillaries to three equal optional subjects under one combination has created surplus teaching staff, more so in the Sciences.

Generally the Board of Studies should be objective; personal considerations such as job potential for teachers, non-introduction of new topics due to incompetency, recommending textbooks of specific authorship etc., should not influence the working of the Board. Unfortunately, such considerations do play a role. In order to overcome these constraints the UGC has rightly set up curriculum development centres to design model curriculum for each subject with the objective of promoting excellence in teaching and learning.

The Board of Studies of the University/Autonomous colleges have freedom to examine critically the UGC sponsored curriculum and suggest alterations/modifications/structural changes, etc. Most of the universities are doing curriculum improvement rather than changes. There is a distinction between improvement and change. According to Taba, "Curriculum improvement means changing certain aspects of the curriculum without changing the fundamental conception of it or its organisation". Now the Board of

Studies can make academic exercise only to promote excellence in teaching.

Curriculum Implementation

The Board of Studies/Expert Bodies may frame a curriculum in an excellent manner but that is not the end of it. The effective transaction of curriculum into action is more important than framing/reframing of curriculum. The effectiveness and quality of curriculum transaction is dependent on (a) availability of trained teaching staff; (b) appropriate methods of teaching; (c) provision of adequate instructional time, and (d) examination and evaluation.

The Curriculum Development Centre in English has stated "The new curriculum not only has some new objectives, new course content and a changed focus, but it also suggests some new teaching materials, methods of teaching and devices for testing. The significance of all that is new in the proposed curriculum must in the first place be fully appreciated by the teacher himself before he can implement it. Indeed in some cases, the teacher may have to familiarize himself with the new subject matter before he can teach it. To put it more emphatically, the new curriculum fails if the teacher is not trained to implement it". The statement is equally true in any other subject curriculum implementation.

(a) *Trained Teaching Staff*

The existing teaching staff may not be suitable or willing to teach the new frontiers of knowledge in the existing subjects/new subjects. At the same time, it is also not possible for the colleges to dispense with the services of existing aided/unaided staff. The problem is how to fit them into the reframed/redesigned or new curriculum. The solution is to retrain teachers in the new curriculum/reframed curriculum. The University may conduct a crash programme and offer module courses in the subjects. The Academic Staff College is offering refresher courses in the indentified areas as suggested by the UGC. It is not however offering refresher courses on the basis of the needs of the affiliated colleges of the concerned University.

There is a dearth of qualified teaching personnel for the restructured courses. Where restructured courses originated from the traditional courses, the teachers of the colleges, who were qualified long back in the traditional courses, continue to teach the subject. Zoology teachers are teaching Fisheries, Botany teachers are teaching Horticulture, Public Administration teachers are teaching Local Self Government, Commerce teachers are teaching Management Studies and so on. The restructured courses, which are entirely new to the colleges, may require qualified teachers who may not be available among the existing staff such as Computer Sciences, Instrumentation, Electronics, Soil Sciences.

The affiliated colleges have no freedom to appoint full-time lecturers since the A.P. College Service Commission is the only competent authority to select teachers for all the affiliated colleges both aided and unaided. Of course, the college can appoint part-time lecturers as a stop-gap arrangement but no qualified teacher would accept the part-time lecturership. Further the State Government is not committing itself towards financing new courses/new combinations/reframed courses, even when the UGC offers to sanction additional posts to cater to the new optional and innovative courses. The State Government is not willing to take over responsibility to meet the expenditure after the assistance period of five years.

(b) *Methods of Teaching*

The developers of curriculum should also prescribe the activities, materials, or even the instructional technology to be used in achieving the results of the new curriculum. The UGC is operating two programmes, namely, College Science Improvement Programme (COSIP) and College Humanities & Social Sciences Improvement Programme (COHSSIP) with a major objective of improving teaching technology.

'Completion of the portions' is the commonly heard objective of teachers; which, however, tells nothing of how this feat is to be accomplished or of what orientation will be brought to bear in the teaching of a given course. The major method of teaching is giving a certain number of lectures, which is entirely a mechanical process of transmitting information. The UGC has suggested that formal lecturing should not constitute more than two thirds of the teaching-learning situation. What is required is that lecturing should be supplemented by other recognised methods, such as Group Discussions, Seminars, Quizzes, Role Playing and Project Work/Subject field work. Discussion and assignments should be encouraged. The teacher should set aside one quarter of a clock hour for questions and answers.

In all the affiliated colleges with the exception of autonomous colleges, the predominant method of teaching is lecturing. Even those teachers, who are trained in the COSIP, COHSSIP and refresher programmes of the Academic Staff College, are not using non-conventional methods of teaching. The reason is the university conducts annual examinations which are heavily dependent on the memory of students. Hence the teachers have a strong notion that the lecture method is appropriate for the university examination. The new methods of teaching provide greater scope for interaction between teaching and learning, and such methods are more effective in the continuous sessional evaluation. This is the reason why the Minimum Standards for first degree suggested that at least 25 per cent of lecture work load should be supplemented by other methods such as seminars, problem solving session, term papers, project work, assignments, etc.

(c) *The Working and Instructional Days and Hours*

The UGC Regulations for the Minimum Standards of Instruction for the grant of the first degree state that the number of actual teaching days does not go below 180 in an academic year, excluding examinations, holidays and vacation, etc. The working day need not necessarily be a teaching day and the actual teaching days in an academic year are less than working days. Unexpected events, such as students boycotting classes for a variety of reasons; for teachers not attending to classes on account of entitlement of leave, will often reduce the number of teaching days. There should be a contingency planning for the unexpected events in an academic year, say 10 per cent of 180 teaching days should be added to the academic calendar, making it 198 working days. The UGC has asked the universities to make an effort to raise the number to 200 or more.

The UGC has also suggested an 8 hour working day and total periods provided in the time table should not be less than 40 clock hours. Where there is research, the institution will work for 8 hours per day. Most of the affiliated colleges are teaching institutions and the colleges which are running on shift basis are working for more than eight hours per working day. But colleges which are running without shift system are working less than 8 hours day.

As per the UGC regulations, when a student offers a combination of courses, it should be ensured that the total weekly workload on the student is not more than 30 clock hours. The Andhra University has implemented the regulation under the Common Core Curriculum and the instructional scheme is designed within the framework of 30 clock hours per week as given in the Table below.

Originally the above scheme of instruction was the same for Arts and Science, but the Science teachers are not in a position to cover the theory and especially practicals, within the stipulated period of 4+2 clock hours per paper per subject per week in the first and the second years and 3+2x2 per subject (two papers) per week in the third year. The Andhra Pradesh State Vice-Chancellors' Conference, therefore, took a decision to fix up the duration of the degree practical classes (lab. hours) at 3 clock hours per subject per week instead of 2 clock hours a week. The teachers of Mathematics, Social Work, and Music are also demanding similar benefit for their problem solving session/field work/practice classes, respectively. This demand is yet to be considered. There is a feeling among the teachers that the instruc-

Table

Subject	First Year		Second Year		Third Year	
	No. of papers	Instructional hours	No. of papers	Instructional hours	No. of papers	Instructional hours
Part I						
Foundation Courses :						
English	1	5	1	5	—	—
Second Language	1	4	1	4	—	—
Indian Heritage & Culture and Science & Civilisation		3		3	—	—
Part II : Group						
X	1	6	1	6	2	5+5
Y	1	6	1	6	2	5+5
Z	1	6	1	6	2	5+5
		30		30		30

tional hours provided in the time table may not be sufficient to cover the entire syllabus.

Visualising the situation the UGC has stated that "Every item in a given syllabus may not have to be taught in the class as a prerequisite for the examination, but on the other hand it would be counterproductive to hold examinations or reduce courses because the number of working days has been curtailed in a particular situation. If this happens, examinations will lose their credibility, students will perform poorly in competitions and interviews, and if they are admitted to the next class, its standards will also suffer". The teachers should take note of this guiding principle and act accordingly.

(d) *Examinations and Evaluation*

The chief lacuna in the present examination system is that it is not organically related to the actual process of education. The New Education Policy (NEP-1986) has suggested continuous and comprehensive evaluations in the examination system. Here the issue is the determination of ratio between continuous and comprehensive evaluation. University Education Commission (1949) has recommended that one third of the marks be reserved for work done during the course of instruction.

No attempt is made for the introduction of continuous sessional evaluation except in the Engineering Courses. The teachers of affiliated colleges are not willing to accept additional responsibility of sessional evaluation. Further, the UGC has suggested two clock hours per week as separate work load in addition to 20 hours of work load of teaching and tutorials/laboratory.

The annual examination system is still predominant and that is the only method of evaluation in vogue. The UGC has issued guidelines for the minimum programme of examination reform. One such reform is that the paper-setter should be free to repeat questions set in previous examination. Another reform is that the present practice of giving wide choice should be restricted. If choice is essential, it may be provided by alternative questions in each unit of the syllabus. These reforms have taken shape in the recent years. Further, the structure of the question paper also has changed. In addition to essay type questions (long and short) objective type questions are also included in the question papers.

Finally, in the implementation of the curriculum, there is no integration of teaching, learning and evaluation. Each unit is independent and there is no fully integrated system yet.

Conclusion

In reviewing the curriculum development in Andhra University, we notice that the autonomy conferred on universities and Autonomous Colleges enables them to recognise the local and regional needs for applied courses. The freedom to review and revise the basic courses such as Mathematics, Physics, Chemistry and Biological Sciences is limited as these courses require a measure of uniformity in content and standards at various levels all over the country. The UGC as an apex body, for the determination and maintenance of standards, formulates a definitive pattern and design of such studies in these basics to be adopted by all autonomous institutions, allowing a limited privilege of alteration to suit the practicalities of local or regional resources and essentials. This uniformity in fundamentals enables mobility of students and teachers from one institution to another over the entire country.

Curriculum designing and implementation are the two dimensions of Curriculum Development and both are equally important, though currently heavy emphasis is laid on curriculum design rather than implementation. Equal attention should be paid to curriculum designing and its implementation in order to promote excellence in teaching and learning. □

CRITERIA FOR EXCELLENCE IN RESEARCH

(*Continued from page 7*)

because in the absence of clear-cut criteria laid down in advance, they can manipulate the criteria at their convenience and get promotions and awards for their favourites. This is justified in the name of flexibility. The great harm it does however is that in the absence of well defined criteria for excellence, young researchers do not know what is expected of them. Many of them believe that what is required to go ahead in life is number of papers of any quality and the favours of the powers that be. They lose faith in the fairness of the system of rewards and recognition and we fail to utilize even fifty per cent of their scientific potential.

(ii) In all countries of the world, the criteria that we have discussed are not only recognised, but are put down in black and white. In addition, opinions of real experts in the special fields are confidentially obtained. All the data about every individual is put before promotions and award committees and they give their reasons for the decision in writing in terms of the criteria laid down. The whole system is open and everybody is satisfied. There is no frustration and everybody puts in his best and excellence results.

(iii) We should have a national debate to evolve a consensus on criteria for excellence, put it in black and white and make it available to every researcher and everybody who sits in judgement on them.

(iv) Even if authorities do not act, let every researcher assess his own work in terms of these criteria every year and let every department or institution evaluate itself every five years and let the assessment document be public.

(v) Let research workers themselves recognise and appreciate excellence whenever and wherever they find it. □

UGC Grant for Karnatak Varsity

The University Grants Commission (UGC) has sanctioned Rs. 32.75 lakh on a COSIST (Committee for Strengthening Infrastructure for Science and Technology) programme for the Statistics Department of the Karnatak University. According to Dr. G.K. Narayana Reddy, Vice-Chancellor, the university was the first on the COSIST programme waiting list in the State. He said the UGC had also sanctioned an extension for the activities of the Centre for Women's Studies for five more years. He said the women studies centre, started last year, had to be developed with the necessary infrastructure and personnel. Research programmes and lectures on different subjects were being planned by the centre, he disclosed.

During the Seventh Plan, the UGC had released grants totalling about Rs. 4 crore to colleges affiliated to Karnatak University. As many as 20 colleges have received sanction for the acquisition of computer units at a cost of Rs. 1.25 lakh. The university has planned a programme to train the principals of such colleges in the use of computers, he said.

Dr. Reddy also revealed that the UGC had released Rs. 8 lakh as unassigned grants for arranging seminars, conferences and for deputing teachers for such conferences both in the country and abroad. He said seminars and conferences had been conducted in zoology, chemistry, political science.

Dr. Reddy also informed that the Academic Council, at one of its meetings, had decided to introduce three optional subjects of equal importance for degree courses from the next academic year. It also decided to introduce entrance tests for admission to postgraduate courses. While making admissions, 50 per cent weightage will be given for performance at the qualifying exams and 50 per cent for the performance at the entrance test, he said.

Certificates Presented to TRYSEM Trainees

The Department of Women's Studies of the Alagappa University recently awarded certificates to the Trainees of the TRYSEM Courses in Screen Printing and Repairing and Maintenance of Domestic Electrical Appliances. Presiding over the function, Dr. (Mrs.) Radha Thiagarajan, Vice-Chancellor, called for an effective interventionist role of Universities in the implementation of development programmes in the community around. Commenting on the successful conduct of the TRYSEM Courses by the Department of Women's Studies as part of its Extension Programme, she remarked that it was a challenging experiment turned into a success story.

Dr. S.V. Chittibabu, former Vice-Chancellor, Annamalai University, felt that rural girls being coached in non-traditional occupations, particularly electrical trade, was something unique and symbolic of the liberative transformative force working in our society.

Shri A. Elangovan, District Collector, Pasumpon Thevar Thirumagan District, delivering the keynote address remarked that skill training given to women was a largesse to their family and society at large. He complimented the Banks which had come forward to assist the trainees to start their small scale units.

Shri Thiagarajan of DRDA pointed out that there existed a wide gap between the planning and implementation levels; hence the benefits as desired by the Government did not reach the masses. But the TRYSEM Courses conducted by the Department of Women's Studies in the University had proved ideal and were to be emulated. Dr. (Mrs.) Regina Papa, Director of the Department of Women's Studies, presented a report on the systematic and scientific conduct of the TRYSEM Courses.

Current Serials in Hyderabad

The Indira Gandhi Memorial Library, University of Hyderabad, has brought out the "Union List of Current Serials in Hyderabad 1989". This Union list provides 5642 unique periodical titles being subscribed by 30 major libraries in Hyderabad and Secunderabad. It covers all disciplines of sciences, humanities and social sciences.

The total data is available in machine readable form, which facilitates easy updation and corrections required to bring future editions of the list. This list helps to strengthen inter library co-operation, to make comparisons of duplication amongst libraries and help planning acquisition of serials to the individual libraries. This data can be expanded to include more libraries interested in the inter library co-operation. Further details can be obtained from Shri E. Rama Reddy, I/C. Librarian, Indira Gandhi Memorial Library, University of Hyderabad, Hyderabad.

Young Scientists Awards

The Indian Science Congress Association at its 77th session held recently at the Cochin University of Science and Technology, Cochin, announced its young scientists awards for the year 1990 for 18 scientists below the age of 30 years for their outstanding research work in the fields of Mathematics, Statistics, Physics, Chemistry, Geology and Geography, Botany, Zoology, Entomology and Fisheries, Anthropology and Archaeology, Agricultural Sciences, Physiology, Psychology and Educational Sciences, Engineering Sciences and Medical and Veterinary Sciences.

The awards instituted in 1981 are intended to encourage the young scientists to prosecute further research work in their respective fields. Each award carries a cash amount of Rs. 1000, a certificate of merit and Rs. 2500 as incidental expenses. The upper age limit of the candidates for the award is 30 years as on January 1, of the session at which the awards are announced.

Refresher Courses in Journalism and Home Science

The Academic Staff College, Banaras Hindu University, proposes to organise refresher courses in Journalism and Home Science in the Year 1990-91 in addition to courses in Hindi and Mathematics. The college also proposes to organise refresher course (need based) on "Environment Awareness". To begin with, short-term courses are proposed to be organised for local university and college teachers in April 1990.

M.Phil. in Futurology

The Department of Mathematics of the Gandhigram Rural Institute (Deemed University) has started an M.Phil. course in Futurology. This two semester, full time, residential course represent varied disciplines such as Economics, Rural Sociology and Panchayati Raj, Social Work, Home Science, Rural Development and Statistics. The course was recently inaugurated by Shri D.K. Oza, Vice-Chancellor of the Institute.

Youth Festival with A Difference

The North Gujarat University recently organised its first Youth Festival in which 46 Colleges affiliated to the University participated through their 287 young artists, 155 boys and 132 girls. The Festival was inaugurated by Shri C.I. Joy, the District Collector. Shri KP. Yajnik, Vice-Chancellor, presided over the inaugural function.

Competitions were held in the events of Music, Dance, Literary Event, Theatre, and Fine Arts.

The Youth Festival was designed to create an awareness among the students of community enrichment and education in arts and aesthetics. As part of the programme a six-hour interface between student-artists, college teachers in-charge of art programme, and noted artists from various art areas was organised. The first session was devoted to performing arts and the second to the tele-film as an art form. Both developed into mini workshop on art involving play reading, demonstration, a dramatisation, role-play, discussion and evaluation—all culminating into better understanding and appreciation of art as a vital ingredient of a civilized, and self-fulfilling human existence.

News from Agril. Varsities

National Conference on Mycorrhiza

"It is essential to work out the methods of production and storage of high quality inoculum with maximum potential. Further, more concentrated efforts should be made to work out the methods of applying mycorrhizal inoculum to the seed or soil and on inoculum placement in order to get maximum response. Attempts to culture VA mycorrhizal fungi should be given top priority. Although culturing the VA endophytes now presents a challenge if successful, the reward would be great for practical agriculture" said Dr. N.S. Randhawa, Director General, Indian Council of Agricultural Research while inaugurating the 3-day National Conference on Mycorrhiza held recently at Haryana Agricultural University (HAU), Hisar.

Dr. Randhawa said that in tropical agriculture, the major importance of mycorrhizal symbiosis would be in its role in the phosphorus nutrition of the plants, especially because tropical soils were invariably poor in available phosphorus, its fixing and phosphatic fertilizers being expensive. In legumes, Dr. Randhawa said that the triple symbiosis of legumes, mycorrhizal fungi and rhizobia deserved special attention because legumes were very important sources of protein and phosphorus was necessary for symbiotic nitrogen fixation. In phosphorus deficient soils, he said that the legumes host plants obtained phosphorus mainly through VA mycorrhizal association. This aspect was now receiving increased attention under Indo-US STI project at the Indian Agricultural Research Institute and the University of Agricultural Sciences, Bangalore.

Emphasising the importance of mycorrhiza to the host plant, Dr. Randhawa said that greater importance of mycorrhiza lay in the extension of the potential zone of the root fungus system into soil, fertility and increased efficiency of water and nutrient uptake. The importance of fungal symbiosis to host plants depended on the structure of the root system and availability of water and nutrients in the soil.

Dr. Amrit Lal Chaudhry, Vice-Chancellor of HAU, who presided, said that as mycorrhiza greatly helped in enhancing the transport of major nutrients, partially phosphates, such effects fortunately were more pronounced in soil of low fertility. Another important dimension, he said, was their relevance in inducing suppression of soil-borne plant pathogens which are otherwise difficult to control by conventional fungicidal methods.

Highlighting the work being done in the field of mycorrhiza at the university, Dr. Chaudhry said that extensive studies have been carried out over the last 15 years on various dimensions of plant growth responses to VA Mycorrhiza. He stressed the need for mass production of fungal inocula for getting higher production and said that the future use of mycorrhiza inoculation in normal farming system was of great importance. These must be genetically stable and competitive as symbionts so that they persist in the crop.

Over 200 delegates from India and foreign countries such as Indonesis, Malaysia, Thailand, Pakistan, Nepal, Bangladesh and Canada participated in this 3-day conference and held detailed discussions for finalising future strategies of the research work being done in this field.

International Workshop on Cropping Systems

Dr. S. Jayaraj, Vice-Chancellor of Tamil Nadu Agricultural University presided over the valedictory function of the six-day International Workshop on Cropping Systems held recently at the TNAU Campus. In his address Dr. Jayaraj said that the workshop and deliberations could pave the way for brushing up the various schools of thought and also open new vistas in simulation modelling. Deliberating on the wide variations in rice based systems, he cautioned that the simulation models be so tailored as to critically find out the causes for the variation in rice production, differences in varietal performance and casuatic biotic and abiotic factors.

Quoting the incidence of planting rice throughout the year which reduces the productivity, the Vice-Chancellor called upon the participants to find out suitable area specific cropping systems. "From single crop to cropping system and now to Farming System Approach" is the cycle of the agriculture development in our country" he said.

The crop modelling, he said, should take into account the production potential on nutrient management, monitoring soil and water interaction and plant protection based on ecosystem. Citing the initial success of the rainfall prediction model by Tamil Nadu Agricultural University, the Vice-Chancellor said that the pre-monsoon sowing was taken up in more than 50 per cent of black soil areas during last season. He added that the rainfall prediction and crop weather modelling would help the farming community in preparedness on crop planning with the choice of crops and varieties. This modelling exercise would be useful insofar as the optimisation of the use of scientific manpower, a lot of time and energy could be saved.

Dr. N.S. Randhawa, Director General of ICAR, who delivered the valedictory address, lauded Tamil Nadu Agricultural University for its innovative research programmes in cropping system and simulation modelling. He said that the scientific basis of assessing crop production was required for management of agriculture and it was towards this objective, the crop simulation models needed to be developed and validated. Since a simulation model was a dynamic system it had to function with the same input which a normal plant needed and among them, light, temperature, humidity, water, nutrients and plant characteristics were important.

The ICAR chief wanted that the weather parameters of radiation and temperature be recorded to the desired level which would help generating weather data on national network. He added that our scientists should be trained in the field of simulation modelling and through them the models should be validated against sound experimental data.

Dr. Penning de Vries presented the report on the workshop, explaining the various themes and coverage in the workshop. He highlighted the simulation research themes of cropping systems, potential production, N & P resources and recognition of Insect and Disease damage.

International Conference on Seed Science

Scientific advance was the only hope for producing enough food for the increasing population of India in the coming years, said Prof. M.G.K. Menon, Minister of State for Science and Technology, while inaugurating an international conference on seed science and technology held in New Delhi recently. He said the country would have to double its annual food output increase to seven million tonnes to achieve the targetted production level of 240 million tonnes of foodgrains by the turn of the century to support an anticipated population of 1000 million.

As the country's land resources were limited, the proposed increase had to come from a rise in productivity. This could be only achieved by harnessing scientific developments in bio-technology, weather forecasting and satellite based information system, he added.

Prof. Menon said development of high-yielding seeds suited to the different agro-climatic conditions, was the most important factor in getting to the targetted food production levels. He hoped that the seed scientists and technologists would rise to this challenge to produce enough food for the nation.

Prof. Menon pointed out that seed production would soon become an industrial and a creative activity wherein the breeding rights and social justice would have to be ensured.

News from UGC

INSAT-1B Programme of UGC

Between 16th March to 23rd March, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

16.3.90

"Space Communications : Space Segment"

"India Votes—I"

"The Pristine Hill Stream"

17.3.90

"College that Goes to People"

"Law Day"

"Library & Automation"

18.3.90

No Telecast

19.3.90

"Photoelectric Effect—II"

"Entrepreneur & Enterprise—Case Study—II"

"Agricultural Growth in India"

20.3.90

"Molecular Spectroscopy"

"Teaching Shops and Bazaar Notes"

"Echography"

21.3.90

"Prefabrication Techniques of Building Construction"

"Mesolithic Society"

"Organisation & Expression of Genes—I"

22.3.90

"Introduction to Computers—V : Basics—I"

"Disposal of Sewage Water in Oil Refineries"

"A Brief History of Tamil Literature"

23.3.90

"Space Communications : INSAT System"

"India Votes—II"

"Facets of a Country : Images of Germany"

2nd Transmission

12.00 noon to 1.00 p.m.

16.3.90

"A Date With Maths—II"

"A Little More Consideration, A Little More Thought"

"What on Earth Are We Doing to Our Water ?"

17.3.90

"Spectators in a Peasant Land—I"
"Basic Legal Features of a Company"
"Facing the Interview"

18.3.90

No Telecast

19.3.90

"Classical Mechanics—XII : Rigid Bodies—Kinematics"
"Environmental Pollution—Economists' View"
"Raw Material : Sugar"

20.3.90

"Filtration—A Laboratory Aid—II"
"Media in Formal and Non-formal Education"

21.3.90

"Corrosion—II"
"Nature is Culture"
"Somaclonal Variation"

22.3.90

"Graphics With Microcomputers—IV : Graphic Programming"
"Deccan Traps—Archives of Ancient Volcunism"
"Let's be Polite"

23.3.90

"Construction of 17-Gon"
"Your Attention Please"
"The Caspian People and Oil"

UGC Fellowships for 23 Foreign Researchers

The University Grants Commission has selected 23 research scholars from different developing countries for the award of Research Associateships (2) and Junior Research Fellowships (21).

The selected scholars are : Dr. Abdul Kazim Ibrahim Yaacoub, Syria (Literature), and Shri Javier Ugaz Ortiz, Peru (Philosophy) (both Research Associates); Shri Mohammad Ali Ghanbari Sissan, Iran and Shri Naseer Khallouf, Syria (Bio-Chemistry), Shri Kelbessa Urga, Ethiopia (Organic Chemistry), Shri Heoshang Aghabozorgi, Iran (Pharmacy), Shri Sahid Hashemi Tabatabali, Iran (Engineering, Earth Sciences), Shri Innocent Chika Nwosu, Nigeria (Zoology), Shri Abdul Gadir Elfadil, Sudan (Botany), Shri Sutnam Singh Sataya and Shri Pharmaha Prasit Inkrungkao, Thailand (Philosophy), Shri M. Nadarajah, Malaysia (Sociology), Shri Young Bennett Meyen, Nigeria (Psychology), Shri Phamaha Santi Sentidharangkure, Thailand and Shri Narainduth Dabeodasa, Mauritius (Sanskrit), Shri Obuoforibo George I.J., Shri Richard Oki. and Shri Nnamdi Okolie Clement, Nigeria (Political), Shri Moma Ernest Onyemaechi, Nigeria (Middle Eastern), Shri Chefena H. Marian, Ethiopia (English), Miss Ariya Kuha, Thailand and Shri Oku Christopher Chuku, Nigeria (Education), and Shri Paul C. Njoku, Nigeria (Management Studies) (All Junior Research Fellows).

A Commission is providing assistance to the talented scholars from the developing countries for doing post-doctoral studies, and research leading to M.Phil and Ph.D. degrees in Indian Universities in science, engineering, humanities and social science subjects.

News from Abroad

Guidelines on Adult Programmes

The American Council on Education (ACE) has issued a new set of principles on alternative and external degree programs to help adult learners make the best decisions about beginning or continuing their college education.

"Because many alternative and external degree programs for adults are held at a variety of sites and times and may offer credits for learning acquired through experience or independent study, the quality of these programs is frequently questioned," said Mr. Henry Spille, Vice-President of ACE and director of the Center for Adult Learning and Educational Credentials, which worked with The Alliance : An Association for Alternative Degree Programs for Adults to compile the criteria. "The principles should serve as a consumer guide for adults who are in the process of selecting an academic program."

Mr. Spille noted that the principles also are intended to help those organizations that accredit such programs judge the quality of institutions that operate alternative or external degree programs.

The principles offer a number of criteria that can be used to evaluate program quality. They include :

- A mission statement that clearly reflects an educational philosophy, goals, purposes, and general intent of the adult learning program, and that clearly complements the institutional mission.

- Faculty and academic professionals who share a commitment to adult learners and possess the knowledge and skills required to teach, advise, and counsel them.

- A program that provides diverse learning experiences that meet established academic standards and also incorporates general student goals and sets specific learning outcomes.

- Program policies, procedures, and practices that take into account the conditions and circumstances of adult learners and promote their success.

- Strong financial management with proper library, laboratory, computer, and administrative resources.

- Regular evaluation of the program to assure that standards are set and to stimulate program improvement. Evaluation should involve faculty, academic professionals, administrators, and students.

"Adults returning to college bring with them very different experiences and have different expectations than the younger college student," added Mr. Spille.

Degree Completion Rates in U.S.

A study, "Undergraduate Completion and Persistence at Four-Year Colleges and Universities by the National Institute of Independent Colleges and Universities reveals that only 41 per cent of college students are likely to complete a bachelor's degree within six years of their high school graduation The study also found that a higher percentage of undergraduates at four-year independent colleges and universities complete their college degrees, and in a shorter period of time, than undergraduates at four-year public institutions.

The study shows that the overall completion rate of students who enrolled full time in independent higher education institutions directly from high school is 54.2 per cent after six years, compared to 42.7 per cent in the public sector.

The findings are based on the Education Department's "High School and Beyond" data base, a survey of 28,000 high school seniors in 1980.

The data show that approximately 23 per cent of low socio-economic status students and approximately 14 per cent of low ability students received bachelor's degrees within six years. However, completion rates increase with socio-economic status and academic ability.

Other report findings include :

- College degree completion rates for black and Hispanic students are between 25 and 30 per cent, compared to more than 50 per cent for whites and Asian Americans.
- Students who received a grant in their first year of college were more likely to remain enrolled than students without grants.
- The greatest college enrolement loss occurred during the first year of college and after the eighth semester, with almost 20 per cent of the students dropping out by the third semester.

We Congratulate . . . .

Dr. N. Rudraiah who has joined as Vice-Chancellor of Gulbarga University.

UNIVERSITY NEWS

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I, Sutinder Singh, hereby declare that the particulars given above are true to the best of my knowledge and belief.

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Education, Employment and Plus Two Stage

Sir,

I would like to compliment Dr. Amrik Singh on his excellent, thought provoking and comprehensive article on Plus two Pattern and Employment which was published in the *University News* of 1-1-90. In this connection, I would like to comment on some of the issues raised in the above article.

Since the establishment of Central Schools all over the country for more than 20 years, the students passing out from such institutions have a distinct edge over the students passing only from the state boards in regard to admission to the professional courses such as medicine and engineering. Realising this, atleast one State Govt. viz., Tamil Nadu had taken steps to upgrade their syllabus on par with that of the Central Board of Secondary Education (CBSE). It is hence essential that other State Governments should fall in line so that uniform standards can be ensured.

As the author has pointed out, it is also very much essential that in the ten plus two stage more vocational courses are introduced so that the students who have a vocational bent of mind either because of tradition or due to inborn skills can pursue the same. Apart from this, the range of such courses can be widened to include many new subjects due to rapid industrial development, especially in the fields of Petro-chemicals, Polymers, Electronics, Machine tools, etc. It may also be pointed out here that in order to encourage the students whose parents were engaged in occupations such as Blacksmithy, Carpentry, etc., Shri C. Rajagopalachari who as the Chief Minister of Tamil Nadu in the Sixties had rescheduled the timings of the Schools in such a way that the students would attend the Schools in the morning and carry on their family occupations in the afternoons. However, this well meant Scheme was dropped by the succeeding governments.

It is however unfortunate but true that the students entering the engineering disciplines, either in the diploma or the degree levels do not realise that the only sure way of learning any trade is to work with both the hands. In order to remove this lacuna some sort of incentive scheme as is prevalent for students taking-up NSS activities, literacy mission, etc. may be adopted.

Yours etc.
R.K. Chari,
Librarian, Rural Engg. College,
Loni-413736, Distt. Ahmednagar.

Teaching Communicative Skills

Sir,

Your 25 September, 1989 issue of *University News* carried the welcome news of introduction of M.A. in English language by the Madurai Kamaraj University. But I think we shall have to start the course of communicative skills for many subjects like medicine, engineering, law, commerce, agriculture, science, technology and other disciplines. Their problems are the ability of communication (listening reading, speaking, writing) in these disciplines. After teaching for 25 years, I have come to this conclusion that our students, particularly from the rural areas, are not weak in intelligence but they have poor ability of communication in these and various other disciplines. That is why their exposition of these disciplines is weaker and they lag behind. I hope the concerned authorities will pay attention to this problem while framing the syllabus.

Secondly, I liked the thought provoking article, "Restructuration of Undergraduate Courses in Autonomous Colleges" by Principal Francis Soundararaj (*University News*, 27-11-89). There is a need of not ignoring local needs. It is also true that individual institutions must not suffer for want of freedom. But freedom is a fearful responsibility. The misuse and abuse of freedom are far more dangerous things. The concept of "limited autonomy", "outstanding colleges", "good colleges" is very vague and relative. Politics and money can twist these words very easily. So long as the teaching community is considered as paid servants, there will be little meaning in the autonomy. Do we have true academic freedom ? Can we openly criticise the management ? government ? religious matters ? social structure ? The question is "Scholarship to what purpose ?" The purse is in the hands of the government. Vice-Chancellor is no longer an honorary but a paid post. Let us not get ourselves bogged down in phoney ideas, and utopian words and vague dreams. Let us be practical. Education for bread and education for knowledge are two different things. Very few will opt for the second. Quality and quantity can't go *pari passu*. Too much of experimentation in the field of education is dangerous, for it effects generation together. There is an immediate need of more and more specialized institutions of higher learning. The coming age will be the age of technocrats and specialists. We must not forget subjects like methematical linguistics, tissue culture, cybernetics, etc. We are entering the second phase of Industrial Revolution while the West is entering the third phase. We must not lag behind. We are already 40 to 50 years behind.

Yours etc.
K.G. Chinchalkar,
Lecturer in English,
B.N.N. College, Bhiwandi-421305

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RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Agarwal, Ashok Kumar. *A study of some problems in fixed point theory.* HS Gour, Dr. R.K Namdeo.

2. Aherkar, Shirish Motichand. *On relativistic charged distributions and associated space times.* Shivaji. Dr. G.G Asgekar, Department of Mathematics, Shivaji University, Kolhapur.

3. Bapat, Madhav Shriniwas. *A study of fuzzy structures.* Shivaji. Dr. H.V. Kumbhojkar, Department of Mathematics, Shivaji University, Kolhapur.

4. Daheriya, Ramadhar. *Some problems of fixed point theorems.* HS Gour. Dr. R.K. Namdeo.

5. Gupta, Dilip Kumar. *A study of the role of various contractive type mappings in fixed point theory.* HS Gour. Dr. R.K. Namdeo.

6. Jain, Anjana. *A study of some contractive type mappings in fixed point theory.* HS Gour. Dr. R.K. Namdeo.

7. Jain, Pawan Kumar. *Generalised injective modules.* HS Gour. Dr. R.S. Singh.

8. Jain, Rakesh Kumar. *Some problems related to fixed point theory.* HS Gour. Dr. R.K Jain, Reader, Department of Mathematics and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

9. Mishra, Anil Kumar. *Some problems on summability of fourier series and allied series.* HS Gour. Prof. S.K Shrivastava, Reader, Department of Mathematics and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

10. Patel, Premsingh. *Self projective and injective modules.* HS Gour. Dr. R.S. Singh.

11. Sangar, Vandana Mahadeo. *The study of contractive mappings in Hilbert spaces.* Shivaji. Dr. B.B. Waghmode, Reader, Department of Mathematics, Shivaji University, Kolhapur.

12 Sharma, Bhawani Shankar. *Some problems on fixed point theorem.* HS Gour. Prof. S.K. Shrivastava, Reader, Department of Mathematics, and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

13. Soni, Ganesh Kumar. *Fixed point theorems.* HS Gour. Dr. K.C. Shrivastava, Reader, Department of Mathematics and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

14 Varde, Sunita. *Some problems on fixed point theorem.* HS Gour. Dr. R.K. Jain, Reader, Department of Mathematics and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Physics

1. Jundale, Sahebrao Bhimrao. *Studies on electrodeposition and characterization of samarium and samariu*

chalcogenides. Shivaji. Dr. C.D. Lokhande, Department of Physics, Shivaji University, Kolhapur.

2. Kadam, Sambhaji Maruti. *Microstructure and physical behaviour of some mixed ferrites.* Shivaji, Dr. B,K. Chougule, Reader, Department of Physics, Shivaji University, Kolhapur.

3. Patil, Vasantrao Vishnu. *Ferroelectric studies of sodium, ribidium, cesium vanadates and solid solutious sodium-rubidium vanadate, sodium-cesium vanadate.* Shivaji Dr. S H. Chavan, Department of Physics, Shivaji University, Kolhapur.

4. Shah, Prasana. *The study of high temperature superconductors and other related compounds.* Delhi. Dr. Ajay Gupta, Reader, Department of Physics, University of Indore, Indore.

Chemistry

1. Jagatap, Ratnakar Vamanarao. *Polymer supported reagents.* Shivaji. Dr. M.M. Salunkhe, Department of Chemistriy, Shivaji University, Kolhapur.

2. Kharade, Dattatraya Rangarao. *Synthesis and studies of some new benzofuran and benzopyran derivatives.* Shivaji. Dr. M.B. Hogale, Department of Chemistry, Shivaji University, Kolhapur.

3. Kumbhar, Pramod Pandurang. *Applications of Meldrum's acid in organic synthesis.* Shivaji. Dr. R B Mane, Department of Chemistry, Shivaji University, Kolhapur.

4. Mahajan, Suresh Damodar. *Synthetic applications of polymeric reagents.* Shivaji. Dr. M.M. Salunkhe, Department of Chemistry, Shivaji University, Kolhapur.

5. Mrignaini. *New matrix resins.* Delhi. Dr. Devendra Kumar, Department of Chemistry, University of Delhi, Delhi.

6. Nimbalkar, Laxman Vaman. *Kinetics and mechanism of oxidation of aliphatic and aromatic acids by chromium (VI)* Shivaji. Dr. A.M. Chavan, Department of Chemistry, Shivaji University. Kolhapur.

7. Nimbalkar, Ramchandra Vaman. *Spectrophotometric determinations of some metal complexes with aminoguanidines.* Shivaji. Dr. (Smt.) S G. Kawatkar, Department of Chemistry, Shivaji University, Kolhapur.

8. Patil, Hemant Bhagwanrao. *Studies on structural, biochemical and rheological properties of industrially potential polysaccharide occurring in plant seed.* Shivaji. Dr. A K. Gupta, Department of Chemistry, Shivaji University, Kolhapur.

9. Patil, Jayakumar Malagonda. *Separation of elements associated with nuclear fission product using crown ethers and adducts.* Shivaji. Dr B S. Mohite, Department of Chemistry, Shivaji University, Kolhapur.

10. Pradeep Kumar *Ligand-oligonucleotide interaction.* Delhi Prof. M Atreyi, Department of Chemistry, University of Delhi, Delhi and Dr. K.C. Gupta, Department of Chemistry, Council of Scientific and Industrial Research, New Delhi.

11. Singh, Mukul Kumar. *Electro-chemistry.* Delhi. Prof. N.R. Banerjee, Department of Chemistry, University of Delhi Delhi.

Earth Sciences

1. Kumar, S.N. *Structure and geochemistry of Kalpattagramite and associated rocks.* Kerala. Dr. V. Prasannakumar, Reader, Department of Geology, University of Kerala, Kariavattom.

2. Mali, Popat Dnyandeo. *Sedimentological studies of the Kaladgi gronp of rocks around Bagalkot, District Bijapur Karnataka,* Shivaji. Dr. R K. Sukhtankar, Department of Geology, Shivaji University P.G. Centre, Solapur.

3. Pandit, Sudhakar Janardan. *Geological studies of the coastal tract around Ratnagiri, Ratnagiri District, Maharashtra State.* Shivaji, Dr. R.K. Sukhtankar, Department of Geology, Shivaji University P.G. Centre, Solapur.

BIOLOGICAL SCIENCES

Microbiology

1. Pathade, Girish Rajaram. *Microbiological treatability studies on molasses based industrial waste.* Shivaji. Dr. S.C. Kale, Department of Microbiology, Yashwantrao Chavan College of Science, Karad, Distt. Satara.

Botany

1. Puri. S. Jyoti. *Genetical and cultural studies of secondary metabolite production in Gloriosa.* Shivaji. Dr, B.A. Hegde, Prof. and Head, Department of Botany, Shivaji University, Kolhapur.

2. Jadhav, Swarup Mansingrao. *Physiological and genetical studies in medicinal plants.* Shivaji. Dr. B.A. Hegde, Head, Department of Botany, Shivaji University, Kolhapur.

3. Vijayakumar, K. *Studies on the mycorrhizal association of endemic trees of Western Ghats.* Kerala. Dr. T.K. Abraham, Scientist, Tropical Botanic Gardens and Research Institute, Palodu, Trivandrum.

Zoology

1. Gavhane, Usha Vithalrao. *Physiological profiles of trained and untrained college students.* Shivaji, Dr. B.K. Pawar, Department of Zoology, Shivaji University, Kolhapur.

2. Ghorpade, Balkrishna Nivrutti. *Studies on occupational workload and physical fitness status of sugar industry workers.* Shivaji. Dr. B.K. Pawar, Department of Zoology, Shivaji University, Kolhapur.

3. Yadav, Pradip Pandurang. *Studies on neuroendocrine regulation of reproductive activity in female associated sex organs of Semperula Maculate.* Shivaji. Dr. S G. Nanaware, Department of Zoology, Shivaji University, Kolhapur.

Medical Sciences

1. Madhu, C.S. *Risk factors for large bowel cancer.* Kerala. Dr. M. Narendranathan, Prof., Department of Gastroenterology, Medical College Hospital, Trivandrum.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Behera, Akrur. *Adams completion and cocompletion.* Sambalpur. Dr. Sribatsa Nanda, Prof. Department of Mathematics, Regional Engineering College, Rourkela.

2. Bose, Sibnath. *Some problems in algebra : The homomorphism mon-hom (M.N) splitting of ring extensions, criterion for regularity, homological duality and BNSI rings.* NEHU. Dr. P. Jothilingam, Department of Mathematics, Pondicherry University, Uppalam Excussion Centre, Pondicherry.

3. Gaikwad, Vidya Janrao. *On spherically symmetric space-times.* Nagpur. Dr. T.M. Karade, Department of Mathematics, Nagpur University, Nagpur.

4. Rajendra Prasad, Kapula. *Contributions to matrix riccati differential equations and boundary value problems.* Andhra.

5. Ravindranath Babu, Gutti Venkata. *Stability and dichotomies for impulse and generalized differential systems.* Andhra.

6. Sahani, Nityananda, *Topological structures of minkowski space.* Sambalpur. Dr. Sribatsa Nanda, Prof., Department of Mathematics, Regional Engineering College, Rourkela.

Computer Science & Automation

1. Ghoshal, S K. *The numerical integration of ordinary differential equations on multiprocessing system.* IISc.

2. Nandy, S.K. *Algorithms for geometric design rule checking of VLSI layouts in distributed architectures.* IISc.

3. Narayan, Ranjani. *Performance analysis of a multiprocessors machine based on data flow principles.* IISc.

Physics

1. Bandyopadhyay, Apurba Kumar. *Studies on heavy ion fusion.* Burdwan. Prof. Bhupal Ch· Samanta, Department of Physics University of Burdwan, Burdwan and Dr. S.K. Sammadar, Assoc. Prof., Saha Institute of Nuclear Physics, Calcutta.

2. Giri, Rajesh. *Some studies on the fluorescence characteristics of substituted coumarins.* Delhi.

3. Kane, Shashank Narayan. *Mossbaur and magnetic studies of some metallic-glasses and metal chelates.* Devi Ahilya.

4. Mohammad Hussain, O. *Studies in cadmium telluride based photovoltaic cells.* Venkateswara. Prof. P. Jayarama Reddy, Department of Physics, Sri Venkateswara University College, Tirupati.

5. Majumder, Bimal, *X-ray diffraction studies on liquid crystals.* NBU.

6. Mukhopadhyay, Pratip Kumar. *Studies of dynamic elastic properties of spin glass and related magnetic systems across the transition region.* IISc.

7. Pandey, Rakesh Kumar, *Study of discontinuities in energy spectra and perturbation theory.* Delhi.

8. Seyed Hussein Moosavi. *Ultrasonic studies in rare-earth solutions.* Venkateswara. Prof. L. Ramamurthy, Department of Physics, Sri Venkateswara University College, Tirupati.

9. Srinivasa, Ch. C. *Machine tools analysis by holographic method.* Kakatiya. Dr. K. Srimannarayana, Asstt. Prof., Department of Physics, Regional Engineering College, Warangal.

10. Varughese, Abraham. *Theoretical investigation of longitudinally and circularly corrugated microwave feeds,* Delhi.

Chemistry

1. Amruta, Reddy, P. *Chemistry of spirocyclic compounds.* IISc.

2. Bora, Rajindra Singh. *Studies on the nutritive value of some aquatic macrophytes of Kumaun lakes.* Kumaun. Dr. (Smt.) Lata Joshi, Nainital.

3. Damodaran, K.V. *Experimental and modelling studies of glass structure.* IISc.

4. Das, Krishna. *Diagrammatic valence bond theory: Application to one-dimensional kondo lattice model and extension to ab initio molecular calculations.* IISc.

5. Das, Sima. *Organotin derivatives of hydroxamic acid, derived ftom dibasic carboxylic acid.* NBU.

6. Dubey, Shivani. *Phytochemical investigation of some weeds of Kumaun Region.* Rohilkhand. Dr. R.K. Gupta, Bareilly College, Bareilly.

7. Gupta, Kuldip Kumar. *Chemistry of some Indian medicinal plants and molecular modification of some diterpenes.* Jammu. Dr. K L. Dhar.

8. Hamidani, A. Humid Usmanbhai. *Studies on inland brines.* Bhavnagar. Dr, J.R. Sanghavi, Central Salt and Marine Chemicals Research Institute, Bhavnagar.

9. Johari, Rajeeb. *Interrelationship of chemical constituents of plant products with the absorption of macro and micro elements.* Rohilkhand. Dr. M.S. Bhatnagar, Bareilly College, Bareilly.

10. Joshi, Ashok. *Electro-analytical studies of toxic and rare earth metals at dropping mercury electrode: A polarographic study.* Devi Ahilya.

11. Kingsley, J. Jawahar. *Studies on fine particle alpha alumina and related oxides prepared by a novel combustion process.* IISc.

12. Kothari, Ajitsingh, *Kinetics and mechanism of oxidation of some aliphatic aldehydes by Thallium (iii).* Devi Ahilya.

13. Mangaldas, Popat Kiritkumar. *Studies on complex forming ion-exchange resins.* Bhavnagar. Dr. B.D. Dasare, Asstt. Director, Central Salt and Marine Chemicals Research Institute, Bhavnagar.

14. Moorthy, B. *Toxicity* and *metabolism of R—(+)—pulegone in rats: Its effects on hepatic cytochrome p-450 in vivo and in vitro*. IISc.

15. Naga Raju, Ch. *Studies in the synthesis of some novel aza-hetero-cycles based on quinazoline -4 (3H)—ones*. Osmania.

16. Nandi. Debasis. *Physico-chemical investigations on the ion-solvent interactions of tetraalkylammonium and alkali metal halides in non-aqueous solvents and their aqeous binary mixtures*. NBU.

17. Pandey, Krishan Kumar. *Activation of unstable small inorganic molecules : Coordination chemistry of NS, NSO, NSO2, SO and $S_2 O$*. Devi Ahilya.

18. Parimala. N. *Kinetics of acid-base catalysed iodination of ketones by iodine monochloride*. Kakatiya. Prof E. V. Sundaram, Department of Chemistry, Kakatiya University, Warangal.

19. Saxena, Ajeet Prakash. *Chemical composition of plant products in relation to absorption of macro and micro elements*. Rohilkhand. Dr. V. Prakash, Bareilly College, Bareilly.

20. Sista, Venkatrao Jagannatharao. *Studies in utilization of N. Paraffinic hydrocarbons and single cell proteins* Baroda.

21. Siva Ranga Prasad, Tipirneni Arunachala. *New analytical methods for some anti-inflammatory and anti-hisatminic agents in pharmaceutical preparations*. Andhra.

22. Srinivasa Rao, C. *Studies directed toward total synthesis of rifamycin-S*. Kakatiya. Dr. A.V. Rama Rao, Director, Indian Institute of Chemical Technology, Hyderabad.

23. Sundara Setty, K.S. *Synthetic studies in anthrocyclinones and ancillary topics*. IISc.

24. Syed Noorus Salam. *Studies of some metal complexes of some constituents of essential oils and their derivatives* Rohilkhand. Dr. R K. Baslas, Govt. Raza P.G. College, Rampur.

25. Tiwari, Swapna. *Mechanistic studies on pyridinium chlorochromate oxidation of some organic compounds*. H.S. Gour. Dr. G.L. Agrawal, Reader, Department of Chemistry, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

26. Upadhyaya, Hemang Devendra. *Studies on some poly (arylene alkylene)*. Patel. Dr. M.N. Patel, Prof., Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar.

Earth Sciences

1. Bartariya, S.K. *Geohydrological and geomorphological studies of the Gaula River Basin, District Nainital with special reference to the problems of erosion*. Kumaun. Dr. K.S. Valdiya, Nainital.

2. Bhakuni, Surendra Singh, *Structural and metamorphic studies in the Alaknanda, Mandakini and Bhelangra valleys in Chamoli and Uttar Kashi District with special reference to the main central thrust*. Kumaun. Dr. K.S. Valdiya.

3. Bhatt, Suresh Chandra. *Geology and structures of Western Uttarkashi, Bhagirathi Valley, Lesser Himalaya, U.P*. Delhi.

4. Ghoshal, Arupkumar. *Petromineralogy, geochemistry and genesis of Mica bearing pegmatite of some pegmatite bodies of Kodaram Area of Bihar mica belt with special stress on basrauntola pegmatites*. Nagpur. Dr. Chakravarty, Indian Bureau of Mines, Nagpur.

5. Ramesh, V. *Sedimentation and sedimentary tectonics of the banganapalle formation Kurnool group, Andra Pradesh*. Osmania.

6. Sharma, Kuldeep Raj. *Petrology and petrochemistry of granite plutons of Gulmarg and Buniyar Areas, N-W Pir Panjal range, Kashmir Himalaya*. Jammu. Dr. T.R. Sharma, Prof., Department of Geology, University of Jammu, Jammu.

Engineering & Technology

1. Ananthan, H. *Fracture behaviour of plain and reinforced concrete beams*. IISc.

2. Basu. Amit J. *Numerical simulation of a plane "canonical" mixing layer using a vortex sheet model*. IISc.

3. Hamid Ali. *Studies on thermosiphon reboiler*. AMU. Prof. S.S. Alam, Department of Chemical Engineering, Zakir Husain Engineering College, Aligarh.

4. Kshirsagar, J.T. *3rd end wall flow in a compressor cascade*. IISc.

5. Panda, Prafulla Chandra. *Analysis of dynamic performance of power system using thyristor controlled static var compensators*. Sambalpur. Dr. P.K. Dash, Prof. and Head, Department of Electrical Engineering, Regional Engineering College, Rourkela.

6. Pradhan, Nabakumar. *Studies on blends of elastomers containing low unsaturation*. Calcutta.

7. Rajadurai, A. *Effect of 1wt% Al/Si addition on the phase transformation, tensile and fracture behaviour of Cu-9Ni-6Sn spinodal alloy*. IISc.

8. Ravi Prakash, J. *Steady compressible plane flow of cohesionless granular materials in Hoppers and Bunkers*. IISc.

9. Sharma, Sanjay. *Mathematical modelling and experimental study of a solar drying system*. IIT, Delhi. Prof. H.P. Garg, Centre for Energy Studies, Indian Institute of Techology, New Delhi and Dr. S.K. Gupta, Department of Mechanical Engineering, Indian Institute of Technology, New Delhi.

10. Srinivas, S. *Dynamically reconfigurable architectures for supercomputing systems*. IISc.

11. Vatsala. A. *Development of 'Camclay' models for over consolidated and sensitive soils*. IISc.

12. Veeraragavan, A. *Analysis of structural behaviour of flexible pavements*. Bangalore. Dr. C.E.G. Justo, Prof., Department of Civil Engineering, Bangalore University, Bangalore.

EDUCATION NEWS INDEX

A List of Select Articles and Editorials on Education from Newspapers received in the AIU Library during February, 1990.

EDUCATIONAL PHILOSOPHY

Chandrashekhar, A. Mastering the technique of learning. *The Hindu* 6.2.90.

EDUCATIONAL SOCIOLOGY

Amrik Singh. Evolving a new youth policy. *The Times of India* 24.2.90.

Chauhan, D.H. Reservation issue : Facts and figures. *Indian Express* 14 2.90.

Mathur, S.M. Rationale of anti-reservation movement. *The Assam Tribune* 21.2.90.

Nandakumar, Prema. Towards a goal that is noble and vast. *The Hindu* 27.2.90.

EDUCATIONAL POLICY & PLANNING

Gandhi, Jagdish. Minimum requirements for education. *The Pioneer* 11.2.90.

Inderpal Singh. Education : Time to think. *The Tribune* 11.2.90.

Joshi, Uma. Will education remain elitist ? *Patriot* 13.2.90.

Raina, Badri. Education and the National Front. *The Statesman* 22.2.90.

Sethi, J.D. Education policy : No serious priorities. *The Statesman* 17.2.90.

Singh, R.P. Looking for solutions to problems of education. *The Times of India* 20.2.90.

EDUCATIONAL ADMINISTRATION

ONE MORE All-India service ? (Editorial). *The Tribune* 15.2.90.

Pandey, Ashok K. The changed role of educational administrators. *Amrita Bazar Patrika* 17.2.90.

Surinder Singh. The teacher and the taught. *The Tribune* 11.2.90.

EDUCATION & POLITICS

Kulkarni, A.N. Universities as poll gifts. *Free Press Journal* 1.2 90.

CURRICULUM

Arvinder Singh. The Punjabis are coming. *The Tribune* 8.2.90.

Banerji, Anjan Kumar. Public relations as an academic discipline. *The Hindu* 6 2 90.

Dutt, Nirupama. Days of cookery, computers. *The Tribune* 16.2.90.

Ramadoss, Haripriya. Improved English courses in colleges. *The Hindu* 13.2.90.

LANGUAGE & LANGUAGE POLICY

Jebasingh, Ananthi. Case for a common, unified script. *The Hindu* 27.2 90.

NOT A wise move (Editorial). *The Hindustan Times* 22.2.90.

Sahu, Ramakanta More of reading to improve language skills. *The Hindu* 6.2 90.

SCIENCE EDUCATION

A LACKLUSTRE SESSION (Editorial). *The Tribune* 11.2.90.

Bahuguna, Sunderlal. Humanism in science. *The Hindu* 10.2.90.

REDEFINING THE mandate for science, (Editorial). *The Hindu*. 6.2.90.

DISTANCE EDUCATION

Srinivasacharyulu, G. Better student support services in open universities. *The Hindu* 20.2.90.

TEACHERS & TEACHING

Bhattacharya, P.C. Controversy over teachers' retirement age. *Amrita Bazar Patrika*, 27.2.90.

Deka, B. R. Role of teacher's association in college. *The Assam Tribune* 31.1.90.

Dwivedi, S B. Commercial bias of Bombay University. *Free Press Journal* 19.2.90.

Gupta, Ramanuj Das. Improving the standard of English teaching. *Amirta Bazar Patrika* 20.2.90.

Hoyle, John R and Johnson, Glenn R. The 21st century professor. *Amrita Bazar Patrika*, 13.2.90.

Ramabrahman Future of academic staff colleges. *The Times of India* 27.2.90.

Sansar Chandra. Divinity teacher. *The Tribune* 25.9.90.

LIBRARIES & BOOKS

Abul Hasan. Plea to rationalize imports. *The Statesman* 15.2 90.

Aitken, Bill. The mood of the book fair. *The Statesman* 15 2.90.

BOOK FAIR. *Amrit Bazar Patrika* 4.2.90.

Chopra, Ashok. English still dominates. *The Hindustan Times* 16.2 90.

Chopra, Ashok, Fair success depends on new looks. *The Hindustan Times* 12.2.90.

Chopra, Ashok. Rich choice of paper-backs. *The Hindustan Times* 14 2.90.

Chopra, Ashok. Rich variety for children. *The Hindustan Times* 18.2.90.

Chopra, Ashok. Smaller fair is a blessing. *The Hindustan Times* 13.2 90.

Duggal. K.S. Book fairs have come to stay. *The Hindustan Times* 14.2.90.

Duggal, K.S. Has the book a future? *National Herald* 14.2.90.

Frankel. William. Salman Rushdie and endangered Penguin. *The Statesman* 1.2 90.

Ganesan, S. Publishing indigenously authored university text books. *The Hindu* 13.2.90.

Ghosh, Dharani. Chaos in book import trade. *The Statesman* 15.2.90.

Girija Kumar. Delhi Public Library in doldrums : A case study in organization crisis. *National Herald* 14.2.90.

Gupta, Narayani. Giving books wider readership. *National Herald* 18.2.90.

Iyengar, T.K.S. Information dissemination for national development. *The Hindu* 6 2 90.

Jayarajan, P. The BCL reference bank. *National Herald* 18.2.90.

Kagal, Ayesha. The bookwallahs. *The Times of India* 11.2.90.

Malhotra, D.N. Copyright in Third World. *The Statesman,* 15.2.90.

Mehra, R.K Publishers, public and prices. *The Hindustan Times* 14.2.90.

Miglani, Sanjeev. Opening our window to the world. *The Statesman* 15.2.90.

Murthy, S.S. Electronic publishing trends in India. *National Herald* 14.2.90.

NO TEXT BOOKS (Editorial). *The Assam Tribune* 20 2.90.

Pinkney, Junette A. Black publishers take hold in U.S. *Amrit Bazar Patrika* 27.2.90

Sharma, Ramesh Chandra. Library administration in Assam. *The Assam Tribune* 24.2.90.

Shenoy, Sujatha. Publishers' interests left on the shelf *The Economic Times* 15.2.90.

Vyas, Ravi. A tale of two fairs. *The Hindustan Times* 14.2.90.

STUDENTS & STUDENT ACTIVITIES

Ovsyannikou, Alexey. The dreams and aspirations of Soviet students. *Amrit Bazar Patrika* 20.2.90.

Sinha, L.S. On punishment in schools. *The Hindu* 20.2.90.

PHYSICAL EDUCATION & SPORTS

THE THINKING SCOUT. (Editorial). *The Tribune* 25.2.90.

ADULT EDUCATION

A WAY, but no will. (Editorial). *The Telegraph* 8 2.90.

Rajamani, R C The International Literacy Year. *The Assam Tribune* 12.2.90.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Bhattacharjee, Anil. Education in Tripura in a state of crisis. *Amrita Bazar Patrika* 20.2.90.

Khan, Asif. Education in small states. *Amrita Bazar Patrika* 6.2.90

Sethi, J.D. An overloaded system. *The Tribune* 16.2.90.

INTERNATIONAL COOPERATION

Khan, Asif. Commonwealth assists education growth. *The Pioneer* 1.2.90

INSTITUTIONAL PROFILE

Amrik Singh. JNU : Not upto expectations. *The Hindustan Times* 15.2.90.

EXEMPLARY ACTION (Editorial). (Silchar Medical College). *The Assam Tribune* 26.2.90.

Giridhar, P.P. A central research centre at Guwahati : (North Eastern Research Extension Centre). *The Assam Tribune* 2.2.90.

Perti, R.K. National Archives of India. *The Assam Tribune* 5.2.90.

Vattam, Krishna. College for commoners with royal background. (Maharani's College, Mysore). *Deccan Herald* 3 2.90.

BIOGRAPHICAL PROFILE

Searupa, Harriet Jackson. A magnificent obsession. (Dong Ja Yang). *Patriot* 18.2.90.

UTKAL UNIVERSITY

No. Estt 1/1041-C/Vol V/4825/90
Dated : 3.3.90

Corrigendum to Advertisement No. Estt. 1/1041-C/Vol. V/4450/90 dated 14.2.90, published in Feb 26, 1990 Issue of *University News*.

1. The interview for the following posts have been fixed as per the revised programme indicated below :

The eligible candidates are required to attend the interview on these dates and time. No other intimation will be issued to them.

19th March, 1990 at 11 a.m.
Professor, Chemistry.
21st March, 1990 at 11 a m.
Professor, Oriya.
26th March, 1990 at 11 a.m.
All M B A. Professor posts.
27th March. 1990 at 11 a.m.
Professor, Philosophy.
(Both D.S.A. and Lien vacancy).
27th March, 1990 at 3 p.m.
Professor of English,
(Linguistics, English
Language teaching centre).
28th March, 1990 at 11 a.m.
Professor of Anthropology
(Both D.S.A. post and general)

2. For appointment for the post of Professor, the candidate must have completed TEN years of teaching experience on the last date of application and must satisfy other conditions of eligibility.

3. Application must be submitted at the University office or by Registered post on or before the 12th March, 1990.

4. The original certificates and mark lists be produced at the time of interview.

REGISTRAR

COMBINED ENTRANCE TEST 1990-91 FOR ADMISSION TO M.Sc./M.TECH BIO-TECHNOLOGY

M.Sc. Biotechnology at Banaras Hindu University, Jawaharlal Nehru University, M.S. University of Baroda, Madurai Kamaraj University, Poona University, Goa University, G.B. Pant University of Agriculture and Technology, Tamil Nadu Agricultural University and M. Tech. Biotechnology at Jadavpur University.

Jawaharlal Nehru University will hold on (Sunday) May 20, 1990 a Combined Entrance Test for admission to M.Sc./M. Tech. programmes of participating Universities as given above at the following 27 Centres :

Ahmedabad, Bangalore, Baroda, Bhubaneshwar, Bombay, Calcutta, Chandigarh, Cochin, Dehradun, Delhi, Gauhati, Hyderabad, Indore, Jaipur, Lucknow, Madras, Madurai, Patna, Pune, Ranchi, Shillong, Srinagar, Vijayawada, Varanasi, Goa, Pant Nagar (U.P.) and Coimbatore.

ELIGIBILITY FOR ADMISSION : 1. M.Sc. Biotechnology : Bachelor's degree under the 10+2+3 pattern of education in Physical, Biological Sciences, Pharmacy, Agricultural, Veterinary, Fishery Sciences and/or a Bachelor's degree in Engineering / Technology or Medicine (MBBS) with minimum 55% marks.

2. M. Tech. Biotechnology (Jadavpur University only) Bachelor's degree in Chemical Engineering, Chemical Technology, Agricultural Engineering, Pharmacy, Food Technology & Bio-Chemical Engineering and/or their equivalent with minimum 55% marks.

SCHOLARSHIPS : Candidates selected for admission to M.Sc. and M. Tech. in Biotechnology will be eligible to receive Scholarship of Rs. 400/- p.m. and Rs. 100/- p.m. respectively. Biotechnology is a newly emerging multidisciplinary area on the educational scene and programmes have been developed to meet the growing demand for trained manpower for any meaningful biotechnology activity in the country exposing the students to recent exciting developments in the area of genetic engineering and biotechnology and their exploitation in industry, agriculture and medicine.

RESERVATION OF SEATS : 22½% seats are reserved for SC/ST (15% for SC & 7½ % for ST) and 3% for physically Handicapped candidates who are eligible to apply irrespective of percentage of marks in the qualifying examinations.

HOW TO APPLY : Application form alongwith the brochure can be had on cash payment of Rs. 10/- per set by calling personally on any of the following addresses :

1. Assistant Registrar (Combined Entrance Test, Biotechnology). Jawaharlal Nehru University, New Delhi or any of the Coordinators of Biotechnology programme i.e. 2. School of Biological Sciences, Madurai Kamaraj University, Madurai, 3. Bio-chemistry Department, Faculty of Science, Banaras Hindu University, Varanasi ; 4. Faculty of Science, Department of Microbiology, M.S. University of Baroda, Baroda ; 5. Department of Zoology, Poona University, Pune ; 6. Department of Marine Science, Goa University, Goa ; 7. Faculty of Science, G. B. Pant University of Agriculture & Technology, Pant Nagar (U.P.); 8. School of Genetics, Tamil Nadu Agricultural University, Coimbatore ; 9. Department of Food & Technology & Biochemical Engineering; Jadavpur University, Calcutta.

Those desirous of obtaining application form by post should address their request only to **Assistant Registrar (Combined Entrance Test Biotechnology), Jawaharlal Nehru University, New Delhi - 110 067** alongwith a crossed Indian Postal Order for **Rs. 20/-** payable to Jawaharlal Nehru University, New Delhi to cover the cost of one set of application form and postage together with a self-addressd envelope of **the size 28 cm x 20 cm** inscribing clearly **"Application Form for M Sc. / M.Tech. in Biotechnology"** as the case may be.

The completed application forms are required to be mailed only to the **Assistant Registrar (Combined Entrance Test Biotechnology), Jawaharlal Nehru University, New Delhi-110 067 and not to other participating Universities.**

ISSUE OF FORMS : From February 22, 1990 to April 11, 1990.

LAST DATE FOR RECEIVING COMPLETED APPLICATION FORMS : April 16, 1990.

IMPORTANT NOTE : i) Use separate set of application form in case applying for both M.Sc. and M.Tch. Biotechnology. ii) Candidates who are due to appear in the respective qualifying examination prescribed for eligibility for admission to a particular programme are also eligible to sit in the Entrance Test as per conditions laid down in this regard. However, in the event of selection, their admission shall be subject to their securing the prescribed percentage of marks in the qualifying examination and submission of all documents including final marksheets of the qualifying examination as per deadline prescribed by each University.

PRESSMAN

POST GRADUATE INSTITUTE OF MEDICAL EDUCATION & RESEARCH, CHANDIGARH

ADMISSION NOTICE No. 9/90 (Acad.)

Closing Date for Receipt of Applications is 11th April, 1990

Applications, on prescribed form, are invited for the following postgraduate/postdoctoral courses etc., for the academic session starting from First July, 1990 :—

I. **FIRST YEAR JUNIOR RESIDENTS** (for MD/MS courses) in the following subjects :—

(a) **Clinical Group : 47**

Anaesthesia	- 4,	Dermatology	- 2,	ENT	- 1,
Medicine	- 8,	Obst. & Gyn.	- 4,	Paediatrics	- 4,
Psychiatry	- 5,	Ophthalmology	- 2,	Orth. Surgery	- 4,
Radio-Diagnosis	- 2,	Radiotherapy	- 1,	Surgery	- 10,

(b) **Para Clinical Group : 16**

Microbiology	- 4,	Pathology	- 5,	Pharmacology	– 7.

(i) Those completing their Internship after 30.6.1990 are not eligible.

(ii) Candidates can apply for a maximum of two subjects in clinical group. They can apply for all the subjects in para clinical group.

(iii) Only one application needs to be submitted. The choice of subjects may be indicated in the relevant column of the application. Application fee is Rs. 60/- per subject.

(iv) 22·1/2% of the seats in each of the above mentioned groups are reserved for candidates belonging to Scheduled Castes/Tribes. In addition, 5% seats are reserved for candidates who have rendered or have carried on private practice in rural areas for a minimum period of two years. Details available with the application form.

(v) A limited number of sponsored/deputed candidates may also be accepted for the courses mentioned above.

II. **SENIOR RESIDENTS** :-14 (DM/M Ch. Courses) in the following subjects :—

D.M.		M.Ch.	
Cardiology	2	Cardiovascular & Thoracic Surgery	2
Neurology	3	Neuro-Surgery	2
Neonatology	2	Paediatric Surgery	2
		Urology	1

(i) One post reserved for candidates belonging to Scheduled Castes/Tribes in each of the subjects of Neurology, Neonatology, Cardiovascular & Thoracic Surgery, Neuro Surgery & Paediatric Surgery.

(ii) One seat may be available for sponsored/deputed candidates in the subjects of Clinical Pharmacology, Neonatology, Neuro Surgery, Plastic Surgery and Urology. 1-2 seats for such candidates may be available in the subjects of Cardiology, Gastroenterology, Neurology, Cardiovascular & Thoracic Surgery.

(iii) Upper age limit on 1.7.1990 : Not more than 35 years for general candidates and 40 years for candidates belonging to Scheduled Castes/Tribes and for ex-servicemen and commissioned officers including E.C.O./S.S.C.O., who have been released on satisfactory completion of assignment (including those whose assignment is due to be completed within 6 months). No upper age limit restriction for deputed/sponsored candidates.

(iv) Candidates due to appear in MD/MS examinations during April/May, 1990 can also apply. They will be admitted to the entrance test only if they supply the result of their examination from the University concerned atleast a day before the entrance test.

III. Second Year Junior Residents : 2, for M.D.S. Part I course in the speciality of Pedodontia and Preventive Dentistry.

IV. Diploma course in Immunohaematology and Blood Transfusion.

V. Certificate course in Critical Care Medicine.

VI. M.Sc. Medical Technology (Pathology) with Cytology or Haematology or Immunopathology as special subject.

VII. M.Sc. Medical Technology (Microbiology) with Bacteriology or Parasitology or Virology as special subject.

VIII. M.Sc. Medical Technology (Biochemistry).

IX. M.Sc. Medical Technology (Pharmacology & Physiology).

X. M.Sc. Medical Technology Radiology with Radio-diagnosis or Radiotherapy as special subject.

GENERAL INFORMATION

1. For all courses, where MBBS, or BDS or MD/MS is an eligibility requirement, candidates who have made more than one attempt (i.e. more than one failure, compartment or re-appear) during their MBBS/BDS courses are not eligible. However, those belonging to Scheduled Castes/Tribes with upto two attempts in their MBBS/BDS career will be eligible.

2. Those applying for the reserved seats must append, with their applications, a certificate from the District Magistrate concerned in support of their claim. No other certificate will be entertained.
3. For courses at categories IV to X above only sponsored/deputed candidates will be considered.
4. Courses at categories III & IV are under the Panjab University.
5. The number of seats wherever indicated is provisional and is subject to change without prior notice.
6. The application must be accompanied with non refundable fee of Rs. 60/- in the form of postal order drawn in favour of the Director for each of the courses mentioned above. A candidate applying for more than one subject/course is required to submit separate application, complete in all respects for each subject/course, except for category No. I.
7. Application form and detailed information are available from the office of the undersigned either personally on payment of Rs. 20/- at the counter from 10.30 A.M. to 11.30 A.M. on all working days and from 2.30 P.M. to 3.30 P.M. on all working days (except Saturdays) or by post for which the request must be accompanied with a self addressed envelope size (23x10 cms) bearing postage stamps of Rs. 4.50 and crossed postal order for Rs. 20/- drawn in favour of the Director.

O.P. Sharda
REGISTRAR

CLASSIFIED ADVERTISEMENTS

VALLABHBHAI PATEL CHEST INSTITUTE

UNIVERSITY OF DELHI
DELHI-110007

Applications are invited for the post of Director, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi-110007, on the prescribed form, in the pay scale of Rs. 2500-125/2-2750 (pre-revised) plus Non-Practising Allowance, D.A., C.C.A. and H.R.A. as admissible under the rules in force in the Institute from time to time. (The scale to be revised).

Qualifications : A Scholar of eminence, Medical Graduate of at least 15 years' standing with post-graduate qualifications (recognised by the Medica Council of India). Not less than 10 years experience in teaching and research in areas of Chest and allied disciplines. Administrative experience as Head of Clinical or Research Institution or Department desirable.

Note : It will be open to the Institute to consider names of suitable candidates including eminent non-medical scientists who may not have applied for the post. Relaxation of any of the qualifications may be made in exceptional cases in respect of the post on the recommendations of the Selection Committee.

2. Free unfurnished residential accommodation available within the premises of the Institute.

Prescribed application form and other details can be had personally by visiting Office of the Institute or by sending a self-addressed envelope (size 23x10 cms) with postage stamps worth Rs. 6/- addressed to the Administrative Officer, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi-110007.

The last date for receipt of applications is 5.4.1990.

Satish Chandra
ADMINISTRATIVE OFFICER

INSTITUTE OF ENGINEERING & TECHNOLOGY

SITAPUR ROAD, LUCKNOW-226 020

Advertisement No. IET-1/90

Applications are invited from the citizens of India for the following Faculty and Non teaching positions at this Institute in the prescribed form obtainable on free of charge from the Deputy Registrar of the Institute on request accompanied by a self addressed stamped (Rs. 1 80) envelope (size 25 x 10 cms).

FACULTY POSITION

Sl. No.	Name of the Post	No. of Post	Pay-scale	Qualifications & experience
1.	Professor	04	Rs. 4500-7300	As per A.I.C.T.E. & U.G.C. norms
	One each in Electronics Engg., Applied Physics, Training & Placement and* Civil Engg. Department. (*leave vacancy)			
2.	Assistant Professor	08	Rs. 3700-5700	As per A.I.C.T.E. & U.G.C. norms
	2.1 Civil Engg.	02		
	2.2 Computer Sc. & Engineering,	02		
	2.3 Electrical Engineering	01		
	2.4 Electronics Engineering	01		
	2.5 Mechanical Engineering	01		
	2.6 Applied Chemistry	01		
NON TEACHING POSITION				
1.	Workshop Superintendent.	01	Rs. 3000-4500	Graduate in Mechanical Engineering with atleast 07 years professional experience. Desirable : Experience of maintaining Workshop/ Factory.
2.	System Manager/System Engineer (Software)	01	Rs. 3000-4500	Master degree in Computer Science with specialization in Software Engineering with relevant experience. Or M.Sc. Physics with Electronics telecommunications (specialization) and one year experience in Software development at organisation/ Institution where adequate Computer facilities in running conditions are available.

3.	Programmers	02	Rs. 2200-4000	Master's degree in Computer Science/P.G.D.C.A. with 07 years experience on Computer.
4.	Medical Officer	01	Rs. 2200-4000	M.B.B.S. +3 years experience (P.G. will be preferred)
5.	Assistant Registrar (Leave vacancy)	01	Rs. 2000-3200	Graduate with five years experience. Desirable : Diploma/degree in Management including purchasing, Store Management etc.

Preference will be given to higher qualification and relevant experience.

Post carry allowances and other benefits as approved by the Uttar Pradesh Government from time to time. Depending on higher qualifications and relevant experience, a higher start may be given.

Number of posts may change at the time of Selection.

Application on prescribed form should reach the Director, Institute of Engineering & Technology, Sitapur Road, Lucknow-226020 by 5.00 P.M on 31 3,1990.

Note : Those who applied in response to earlier advertisement need not apply again.

Anil Kumar Saxena
DEPUTY REGISTRAR

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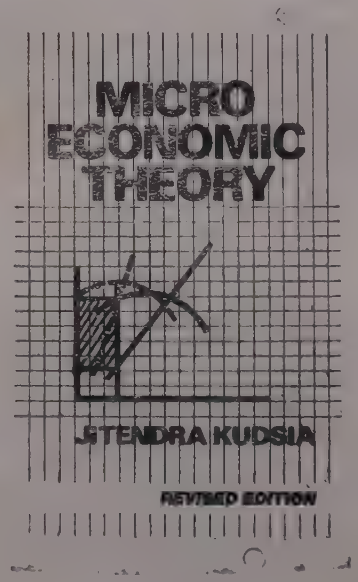

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UNIVERSITY OF LUCKNOW

FACULTY OF FINE ARTS

Advertisement No. 2/1990

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GENERAL

Benefits of Provident Fund/Pension available as admissible under the rules. Period of Probation for all posts is one year.

It is not necessary to fill any/all of the advertised posts. Canvassing will be disqualification.

Prescribed application form can be obtained free of cost by sending a self-addressed envelope size 23 x 10 cm. with postage stamp worth Rs. 6/-, from the office of the Registrar. Last date for submission of applications, duly completed in all respects, with recent testimonals, publication etc. and a Bank Draft of Rs. 5/- drawn in favour of the Registrar, Lucknow University payable at any Bank in Lucknow, is March 30, 1990. Applications without Bank Draft will not be entertained (Postal Order or Money order will not be accepted). Candidates who are in service should send their application through proper channel. Application forms to outstation candidates will be sent upto March 20, 1990.

R.D. Misra
REGISTRAR

JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI

Advt. No. A & E-II/3/90

JNU has opening for faculty positions at various levels in the areas indicated against each :

SCHOOL OF LANGUAGES

(1) Assistant Professor (Japanese) —one

(2) Assistant Professor (Chinese) —one

(3) Assistant Professor (French) —one

(4) Assistant Professor (Persian) – one

SCHOOL OF SOCIAL SCIENCES

(5) Assistant Professor in Community Health —one

(6) Assistant Professor in Social Psychology of Education leave vacancy —one

(7) Assistant Professor in Geography—one

(8) Associate Professor in Economics—one

(9) Associate Professor in Sociology—one

(10) Associate Professor in Political Science—one

SCHOOL OF INTERNATIONAL STUDIES

(11) Professor/Associate Professor/Fellow in Gulf Studies—one

(12) Assistant Professor in Turkish Studies—one

ESSENTIAL QUALIFICATIONS

For Professor : (a) A First or High Second Class Master's Degree in the field of Social Sciences; (b) A Ph.D. Degree or a published work of comparable standard on a subject related to West Asian/Gulf Studies; (c) Ten years experience of teaching and guiding research in the field of West Asian/Gulf Studies; and (d) Knowledge of Arabic/Persian.

For Associate Professor/Fellow : Good academic record with doctoral degree or equivalent published work. Actively engaged in research or innovation in teaching methods of production of teaching materials. About five years' experience with minimum three years as lecturer or equivalent position.

For Assistant Professor : Master's degree in the relevant subject with atleast 55% marks or its equivalent grade, and good academic record.

RELEVANT SUBJECTS/DESIRABLE QUALIFICATIONS

For Post No. (1) : (a) Training in Japan in the field of language/literature; (b) Some teaching experience preferably at degree level; (c) Familiarity with the latest teaching methods. For Post No. 2 : (a) Speaking fluent Modern Standard Chinese with good accent; (b) Training in Chinese language speaking areas; (c) Teaching experience in Indian Universities. For Post No. 3 : Specialisation in Francophone literature either in terms of research work or teaching experience. For Post No. 4 : (a) Master's degree preferably in Modern Persian; (b) Proficiency in Interpretation and Translation from Persian into English and Vice-Versa; (c) Atleast two years teaching experience in recognised College/University ; (d) Adequate knowledge of Indo-Iranian Relations/Studies. For Post No. (5) : (a) A post-graduate degree in any aspect of Community Health; (b) Teaching or research experience in the field of community health. For Post No. (6) : (a) High aptitude for ability to guide research in social psychology of education and developmental psychology; (b) 4 to 5 years teaching experience in any University/College or Institute; (c) Specialisation in Social Psychology of Education, For Post No (7) : (a) M.A./M.Sc. in Geography with specialisation in Geomorphology; (b) Experience in using remote sensing techniques in Geomorphology in conducting field work and in guiding research. For Post No. (8) : Specialisation : Macroeconomics of open economies with special reference to the developing countries. For Post No. 9 : Specialisation in any of the following areas of research : (a) Sociology of Development and Modernization; (b) Sociological Thelry and Methodology; (c) Sociology of Science, Management and Technology; (d) Sociology of Marginal groups, minorities and ethnic communities. For Post No 10 : Specialisation in Philosophy of Social Science Methodology/Methods and Techniques of Empirical Research. For Post No. (11) : (a) M. A. in Social Sciences; (b) Ph.D. or published work in West Asian/Gulf Studies; (c) Experience of teaching/research in West Asian/Gulf Studies; (d) Knowledge of Arabic/Persian. For Post No. 12 : Relevant subject shall be Master's degree in Social Sciences or Islamic Studies. Ph.D. or published work of comparable merit in the field of Turkish studies or Islamic studies, Knowledge of Turkish.

Note : The candidates who have already applied in response to our advts. A & E-II/7/88 and A & E-II/1/90 for the posts mentioned at sl. no. (11) and (12) above, need not apply again, as their earlier applications will be considered alongwith applications to be received now.

Scale of Pay : Professor : Rs. 4500-7300
Associate Professor/Fellow : Rs. 3700-5700.
Assistant Professor : Rs. 2200-4000

In case the candidates are not found suitable for the advertised positions, the University, on the recommendations of the Selection Committee, reserves the right to fill up the said positions at lower levels. It also reserves the right to consider the names of the candidates who may not have applied.

15% and 7-1/2% of the posts of Assistant Professors are reserved for SC and ST candidates respectively. Any of the qualifications experience may be relaxed at the discretion of the University.

Application forms may be obtained free of cost in person or by sending a self-addressed envelope (23 cm x 10 cm) duly stamped to the Deputy Registrar (A & E-II), Room No. 204-B, Administrative Block, Jawaharlal Nehru University, New Delhi-110067. The applications in the prescribed form complete in all respect duly forwarded by the competent authority (for those in service) should reach this University latest by 25th March, 1990.

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- To settle property claims

Do Register in time and get the Certificate free of charge

Registration of Births and Deaths is compulsory under the law. Delayed Registration is also permissible.

REGISTRAR GENERAL, INDIA

davp 89/490

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University News

MONDAY, MARCH 19, 1990 Rs. 2.50

Rural Camp With A Difference

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University Administration in India

●

Teaching Science Through Distance Education

●

International Women's Day

●

Indian Constitution and Polity

●

National Lectureships

REGIONAL ENGINEERING COLLEGE,
WARANGAL-506 004 (A.P.)

ENGINEERING, AGRICULTURAL AND MEDICAL COMMON ENTRANCE TEST 1990 (EAMCET-1990)

1. Entrance Test

A Common Entrance Test, Designated as Engineering. Agricultural and Medical Common Entrance Test—1990 (EAMCET-1990) of Andhra Pradesh will be conducted by Regional Engineering College, Warangal for admission to the first year of the following Courses for the academic year 1990-'91.

(a) B.E./B.Tech./B.Arch. Courses in all University Engineering Colleges and Private Engineering Colleges including minority Educational Institutions in Andhra Pradesh and Regional Engineering College, Warangal (including A.P. Quota of seats in other Regional Engineering Colleges).

(b) B.V.Sc. and A.H./B.Sc. (Ag.)/B.Sc. (Horti)/B.H.Sc. (Rural)/B.Tech. (Ag. Engg.)/B.Sc (Dairy Tech.) Courses in A P. Agricultural University Colleges in Andhra Pradesh.

(c) M.B.B.S./B.D.S. /BAMS / BHMS / BUMS / B.Pharm. Courses in Andhra Pradesh.

2. Requisition for the Application Form

Application Form together with its enclosures including the Instruction Booklet, can be had on payment of Rs. 10/- (Rupees Ten Only) in the form of a crossed Demand Draft, obtained from Indian Bank or any Nationalised Bank drawn in favour of the Secretary, APSCHE, payable at HYDERABAD from any of the colleges specified below, either in person, or by sending a requisition by post together with a self-addressed stamped envelope (stamps worth Rs. 4.50 affixed on it) of size 28 cm x 13 cm. The name of the course for which he/she intends to seek admission should be clearly mentioned in the requisition and superscribed on the envelope also as 'Requisition for..............Course'.

2.1. For Engineering (B.E./B.Tech./B.Arch./B Tech. (Ag. Engg.)/ B Sc. (Dairy Tech) and B. Pharm Courses (M P.C. Group): Candidates with Mathematics, Physics and Chemistry as Optionals in their Intermediate or equivalent Course and who intend to seek admission to above courses can obtain the application form from Principals of the following Colleges.

1. College of Engineering, Andhra University, Visakhapatnam-530 003.
2. JNTU College of Engineering, Kakinada-533 003.
3. JNTU College of Engineering, Anantapur-515 002.
4. JNTU College of Engineering, Kukatpally, Hyderabad-500 872.
5. JNTU College of Fine Arts and Architecture, Masab Tank, Hyderabad-500 028.
6. University College of Engineering, Osmania University, Hyderabad-500 007.
7. University College of Technology, Osmania University, Hyderabad-500 007.
8. S.V. University College of Engineering, Tirupati-517 502.
9. College of Veterinary Science, Tirupati-517 502.
10. V.R. Siddhartha Engineering College, Vijayawada-520 006.
11. Regional Engineering College, Warangal-506 004.
12. Agricultural College, Bapatla.
13. Government Polytechnic, Nizamabad.

2.2 For Agricultural (B.V.Sc. & AH/B.Sc. (Horti.)/B.H. Sc. (Rural)/B.Sc. (Ag.), Medical (MBBS/BDS/BAMS/BHMS/BUMS) and B. Pharm Courses (Bi, P.C. Group):

Candidates with Biology, Physics and Chemistry as optionals in their Intermediate or Equivalent Course and who intend to seek admission to above courses can obtain the application form from Principals of the following Colleges:

1. Osmania Medical College, Hyderabad-500 001.
2. Gandhi Medical College, Bashirbagh, Hyderabad-500 029.
3. College of Agriculture, Rajendranagar, Hyderabad-500 030.
4. S.V. Agricultural College, Tirupati-517 502.
5. Kakatiya Medical Colege, Warangal-506 007.
6. S.V. Medical College, Tirupati-517 502.
7. Kurnool Medical College, Kurnool-518 002.
8. Rangaraya Medical College, Kakinada-533 003.
9. Medical College, Guntur-522 004.
10. Andhra Medical College. Visakhapatnam-530 002.
11. Government Dental College and Hospital. Afzalgung. Hyderabad-500 002.
12. College of Home Science, Khairatabad, Hyderabad-500 004.
13. Agricultural College, Bapatla.
14. Government Polytechnic, Nizamabad.

2.3 For Engineering, Agricultural, Medical and Pharmacy Courses (M and Bi, P.C. Group):

Those who have taken Optional subjects of Mathematics, Physics, Chemistry and Biology in their Intermediate or equivalent courses and who intend to appear for the Test to seek admission to Engineering, Agricultural, Medical and Pharmacy Courses can obtain the application form from CONVENER. EAMCET-90, REGIONAL ENGINEERING COLLEGE, WARANGAL-506 004. (A.P.) Only.

3. Eligibility to Appear for EAMCET-90

3.1 The minimum qualification for eligibility is a pass in Intermediate Examination or appearance at 2nd year Intermediate Examination (10+2 pattern) conducted by the A.P. Board of Intermediate Education, with appropriate optional subjects or its equivalent thereto. However candidates who have passed Diploma Examination or appeared for Third Year Diploma Course in Engineering/Architecture conducted by the State Board of Technical Education and Training, A.P. or its equivalent thereto are eligible to apply for B.E./B.Tech./B.Arch. Courses only.

3.2 Candidates should belong to the State of Andhra Pradesh as defined in the A.P. Educational Institutions (Regulations of Admission) Order 1974 and its amendments Vide G.O P. No. 646 dated 10.7.1979 of Education (W) Department.

3.3 Detailed information regarding eligibility. age, syllabit etc., is given in the Instruction Booklet, to be supplied along with the Application Form.

3.4 The Common Entrance Test will be conducted in Physics Chemistry, Mathematics and/or Biology

(a) For Engineering and Pharmacy Courses mentioned in 2.1. candidates should take the test in Mathematics, Physics and Chemistry.

(b) For Agricultural Medical and Pharmacy Courses mentioned in 2.2, candidates should take the Test in Biology, Physics and Chemistry.

(c) For all the Courses in Engineering, Agriculture, Medicine and Pharmacy mentioned in 2.3, candidates should take the Test in Mathematics, Physics, Chemistry and Biology.

Date of Commencement of Sale of Application Forms : 19.3.1990
Last date for receipt of filled in applications : 16.4.1990.
Date of EAMCET-90 : 29.5.1990 (TUESDAY)

Note : This is only a Notification and not a complete prospectus.

UNIVERSITY
NEWS

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

RURAL CAMP WITH A DIFFERENCE

B.R. Dwaraki*

Birth of an Idea

It happened in the senior postgraduate class doing a course in rural sociology at the Gandhigram Rural Institute (GRI). Two questions were raised. Should not the fashion in which rural camps are organised by GRI be basically different from those by other institutions? Why should the campers run a mess in the middle of a village and eat a variety of food that is far beyond the reach of the majority in that village? The students, numbering a dozen including two girls, took it up as a challenge to answer the two questions. An idea was born.

Beginning of the Experiment

Once the idea was born the students and their teacher (the author) got ready for the challenge. Because it was to be an experiment and the nature of its outcome could only be conjectural, it was decided that the dependence would be only on one factor—i.e. commitment to do something relevant—as far as possible. That is, the programme was put through short of formalisation and remained an 'unofficial' endeavour till it was over.

The experimenters decided not to go in for any institutional support. However, the various staff members involved in teaching different papers were informed of the venture as also the possibility of a request for support.

The batch of students arrived in the village commuting the town-bus with a plan for a 4-day stay. The contact youth leader, with whom repport had been established through the planning stages, received them and led them to the place where they could leave their belongings. The students and the teacher along with the youth representatives went round the village with the twin purposes of meeting the villagers and identifying the items of work that could be undertaken jointly by the students and the local youth during the camp.

Central Theme

The core theme of the rural camp was that each student would be attached to a host family and that there would be no separate mess arrangement in the village. At the outset, the students looked at the arrangement much more as a challenging response to a relevant question. But soon they started enjoying the meal time scramble among the rural youth to take one of the students—or often more than one—to their houses for a meal. The students started, as days passed, to feel elated over the fact that they had become the guests of honour in the village. The pragmatic side of the family attachment experience of the students was that not all the time a student could have a 'good meal'. Reality is not always an easy or a tasty bite !!

Reader in Rural Sociology, Gandhigram Rural Institute, Gandhigram—Tamil Nadu.

Teachers Contribute

Sensing that not all the families with hospitality have the economic standing to the host families, teaching faculty members had been requested to make contributions in kind to augment the participatory spirit prevailing in the village. The contributions came in the form of pickles, vegetables, coconuts, pulses and daily supply of milk. These were distributed daily to the host families as and when the students visited them. Also, each day a staff member offered to provide breakfast to the students in the village.

Unique Experience

Although the villagers as well as the students had known of village camps before, both of them not only agreed that this was a novel experience but seemed thrilled with it. In fact toward the end of the camp the number of families offering to host kept swelling—a clear indication that the villagers had started enjoying the new style of participation. When on the first occasion the vegetables were offered, a couple of hosts (who happened to be from relatively well-to-do background) received the idea with some reservation. A staff member explained the gesture in a beautiful way : it is like a family member returning from the market place with something that he knows is needed at home !

As for students, just the way a journalist reported about it in the *Indian Express*, they started off with hesitation but soon took to it like ducklings take to water !

Warm Up

The underlying idea of the camp was that it was to serve as a warm-up experience for the students who in the same semester would continue day-long weekly visits for the applied course in Rural Sociology. Thus, during the camp stay they undertook work items in cooperation with the local youth, so that some of these can be continued through the weekly visits. Some work items undertaken were : Laying down fence for the kitchen garden; clearing of the bushes around the pathway leading to the drinking water well; laying down the floor for the youth reading room; plan for an open air garden using the waste water from the common water tap area.

Implications

This type of a camp is highly productive from the point of view of establishing rapport between the villagers and the students. Such a camp should precede any attempts that are made by a batch of students to use the village as a laboratory for their action-oriented studies on rural themes.

MINISTRY OF DEFENCE

Defence Research and Development Organisation (DRDO)

Reference advt. No. davp 89/993 appeared in this paper on **19 Feb., 90**, regarding various posts of Scientists. The following Addendum/Corrigendum may be noted.

ADDENDUM

Add the following posts of Scientists "C"

Defence Metallurgical Research Lab., Hyderabad

Item No. 35A : 1 Post

Essential Qualifications : At least second class Bachelor's degree in Chemical Engineering from a recognised university or equivalent. (ii) Four years research experience in the field of Plasma Processing of Materials. **Desirable Qualifications :** Master's degree in Chemical Engineering.

Analytical Study Group, Delhi

Item No. 35B: 1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Electronics/Communication Engineering or Master's degree in Physics from a recognised university or equivalent. (ii) Four years research experience in the field of Electromagnetic theory or computational methods in microwave. **Desirable Qualifications :** Master's degree in Electronics Engineering or Ph.D. in Physics.

CORRIGENDUM

Scientists "B"

(i) **Against Desirable Qualifications of Item No. 36.**

For Master's degree in Electronics Engineering with specialization in Computer Networks/Microprocessors / Digital Communication/Sensors/Monitoring devices.

Read Master's degree in Electronics Engineering with specialization in Computer Networks/Microprocessors / Digital Communication / Sensors / Monitoring devices/Microwaves.

(2) Against Item No. 38 : 24 Posts
Read : 25 Posts
(3) Against Item No. 42 : 1 Post
Read : 2 Posts The additional post is at DEBEL, Bangalore
(4) Against Item No. 46 : 1 Post
Read : 3 Posts
(5) Against Item No. 55 : 2 Posts
Read : 3 Posts The additional post is at R&DE (E) Pune.

The last date of receipt of applications for the above posts of Scientists "C" (Item No. 35A & 35B) is extended to **31st March, 1990.** In respect of candidates from Andaman & Nicobar Islands, Lakshadweep and Abroad, the last date of receipt of Applications will be **14th April, 1990.** Crucial date for determining age of candidates for these posts will be 31st March, 1990. Other general conditions given in Advt. No. 023/RAC/90 remain unaltered.

davp 89/1194

Teaching Science Through Distance Education

G. Ramachandraiah*

Nature of Science Teaching

Science subjects in general and mathematics in particular, provide a special challenge as subjects for teaching at a distance. The analysis of teaching materials, appropriate use of media, and the need for a team approach, takes on special significance in the context of science education. Some of the important characteristics of science and mathematics as disciplines which pose some problems for a distant teaching system are as follows :

(i) *Language* : Scientific and mathematical disciplines have languages of their own, which pose a special problem in communication. A person with no background in chemistry will not be able to understand an article/paper on a scientific topic e.g. Resonance energy, Nucleophilic reactions, isomerism, etc. Communication between scientists in different disciplines can be difficult even at relatively most specialist levels; this is more than just a question of terminology. There are conceptual and methodological differences between, for example, the biological sciences and the physical sciences.

(ii) *Structure :* Any body of concepts or knowledge which makes up any particular area of science as it is taught at university level takes for granted a set of lower level concepts, terms and operations without which understanding is greatly impaired, if not impossible. This reflects the complex nature of the structure of knowledge within any scientific or mathematical discipline.

(iii) *Qualification & Precision :* Most of science is essentially concerned with parameters that can be measured and quantified. This emphasis on precision and manipulation of numerical data combined with respect for objectivity in observing and interpreting natural phenomena again differentiates science-based subjects from the art-based subjects, in many areas of which much greater stress is put on the value of subjective interrelations and criticism.

(iv) *Laboratory Work* : Much of the science as it is practised involves the testing of hypotheses by setting up experimental situations for observing natural phenomena in the field. Science as it is taught must reflect this, so there is a need to put students in laboratory situations and let them experience the raw materials and techniques of the discipline being taught.

(v) *Scientific Spirit* : Science teaching needs to reflect what has been called the spirit of science; the particular approach to rational inquiry exemplified by scientists, driven by a belief in its efficacy and by a restless curiosity.

(vi) *Information* : There is the problem of the knowledge explosion in science and the exponential increase in the amount of new findings and discoveries in science and technology.

For the preparation of science materials for distant study, special care must be taken to produce models of clear exposition. This is just as important for communication amongst the members of the course team producing the material as it is for the finished products and the students who will be using them. There are techniques available for summarizing the structure of teaching materials, for example, the preparation of specific learning objectives in behavioural terms, the designing of maps or networks showing the dependencies between different concepts, and the development of summaries of assumed entry and exit behaviour in terms of required and taught terminology and concepts. The materials resulting from these techniques are with which students can monitor their learning through answers and commentary, provided directly or indirectly.

Distance Study Systems in Science

It is not possible to describe in detail all the distant study systems offering science based courses. It is however, relevant to examine the context in which such systems have developed and for this purpose we shall look at some of the existing systems under five headings, depending on their organisational structure.

(i) Systems that have developed within the context of correspondence schools and institutions or within extension departments of schools and universities.

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*Asst. Professor of Chemistry, A.P. Open University, Hyderabad-500 482.

(ii) Systems that have been set up specifically to use broadcasting to bring courses to off campus students.

(iii) Systems that are primarily dependent on broadcasting organisations.

(iv) Experimental systems which are more or less responsible to Ministries or Ministerial bodies.

(v) Independent organizations which have been established specifically to design and provide integrated multi-media courses for distant study e.g. the Open University.

This order corresponds to some extent to a trend in the last few decades from the use of the multimedia approach within correspondence education systems, through the development of systems in which broadcasting was initially conceived as having a dominant role, to independent systems which use many media and modes of teaching within the framework of an integrated distant study system.

The basic principles on which effective distant teaching in science must be based are given by Kaye and Pentz.

(i) The student should not be left in total isolation. Some face to face teaching and television teaching must be included to overcome this problem.

(ii) There must be adequate provision for laboratory teaching.

(iii) There must be an adequate network of local centres where students can meet each other and part-time teachers.

(iv) Residential accommodation for short term period must be provided.

(v) The subjects studied by the students must be related to their jobs.

(vi) The written teaching material should be specially prepared by the teaching staff of the Open University.

In most courses, the main teaching load is carried by specially written correspondence texts, which are specifically designed for self instruction and differ in several important features from conventional textbooks. These texts are designed to remain basically unchanged throughout the life of the course (four or five years). The other printed components can be changed from year to year, either in the light of the student feedback, or because of new developments in the discipline in question, or as a matter of policy like the tutor—and computer marked assignments. Furthermore, there is a provision for remaking a proportion of the television and radio broadcasts for the second year of transmission. In several current courses, students are provided with cheap cassette tape recorders, and the audio tape components of such courses can be changed from year to year fairly inexpensively.

One of the features which distinguishes the open university from the majority of the other systems is a very high proportion of materials that are produced by the University, and the much lesser use of the existing textbooks, etc. This is partly related of course, to the fact that we are not teaching within the constraints of a fixed syllabus. The first courses produced in the A.P. Open University were four interdisciplinary foundation courses in English, Modern languages, humanities and sciences and these courses have to some extent set the pattern for the second and third level courses currently being given and produced. It was soon made apparent that if these foundation courses were to achieve their objectives, and actually teach people with a wide ange of background, many of whom had not studied or a long time, then we could not rely on existing books to carry the main teaching load. Furthermore, in most of the areas covered in science, there were no existing textbooks that would have been suitable. Accordingly a lot of effort was put in writing new materials and writing them in such a way that they contained sufficient opportunities for students to monitor their progress as they worked through them.

Course Components

The particular design of the distant study course components used by the students was influenced by three major factors :

(1) *The learning mode*

It is essentially a self-instructional one with limited facilities for receiving tutorial guidance.

(2) *The student's background*

The students have a wide range of backgrounds, educational, vocational and other interests.

(3) *The flexibility of the system*

The system had to be as flexible as possible within the given constraints.

These are all factors which are of major importance for any multi-media distant study system.

The Use of Television and Radio

In science courses the pattern of the use of the television components of each unit follows that established on the foundation course. Each course unit contains television material which is mainly integrated with the correspondence texts, and in many cases, with the course experiments and assignments based on the unit in question. Television is used to cover objectively those areas which are difficult, or not possible to explain by using other media. It also plays a general motivational role in helping students to identify with the course team, and to overcome their feelings of isolation.

The radio programmes fulfil the following main valuable enrichment functions :

(i) It brings well known scientists and outside speakers into contact with the students through discussions with open university staff.

(ii) It brings the students a flavour of the excitement and fascination of science to show why scientists find science fascinating. This can be done very well in the atmosphere created by a discussion amongst a small group of speakers, in a way that is almost impossible using the written word.

(iii) It places the material taught in the correspondence text into its social, philosophical and historical background.

However, radio is also used extensively for reinforcing the teaching of more difficult points, often with the help of charts, models, and diagrams etc., which the student is asked to refer to during or before the programme, especially when these are essential to a full understanding of what is being discussed.

The Teaching of Science Practical Work

There are two main channels of practical work—the home kits and the summer schools. The activities and experiments associated with the home kits are generally closely integrated into particular course units, whereas the summer school work is more or less separated from any given unit. The fact that our students must do the great majority of their work at home was a major stimulus for us to provide integrated practical work right through each course. This contrasts strongly with traditional university teaching where courses of laboratory sections often seem to be given more or less in isolation from the material being taught in a parallel course of lectures.

But teaching of practical work is not restricted to the use of the home kit materials and work at summer schools. The main objectives of teaching practical work are (i) development of manipulative skills, (ii) accurate observation, measurement and collection of data, (iii) analysis and presentation of data, (iv) interpretation of data and critical evaluation of experimental design, (v) production of new suggestions e.g. for designing further experiments.

It would, however, not be good to rely entirely on substituted exposure to experimental work. This is where the summer school is so important, where we can supply students with much wider variety of materials and instruments than in the home kits. They have the chance to work on open ended experiments with the opportunity to test alternative explanations of the phenomena they are investigating. However, the use of open ended experiments is not restricted to the summer school. It is not impossible to set up true problem-solving experiments using home kit materials. ☐

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UNIVERSITY ADMINISTRATION IN INDIA

V.S.P. Rao*

University is a community of teachers and students who come together with the goal of learning and expanding the horizons of human knowledge. It is an important instrument employed for exploring, generating, conserving and transmitting knowledge. As a nation-building institution in every underdeveloped country, it has to serve three important constituencies effectively and efficiently : students, teachers and administrators in the university, and society. It should help students in developing a total personality and thus pave the way for the emergence of effective leadership in politics, administration, the professions, industry and commerce. It should help in the transmission of our cultural heritage and prepare students for higher challenges in life. It should also permit teachers to scale new heights by promoting and encouraging research and experimentation. Finally, it should enable the nation to be free from want, disease and ignorance, by the application of humanistic, scientific and technical knowledge to real world problems. Thus, a university is a multipurpose organisation. It exists to teach, to do research and to generate and disseminate knowledge for the benefit of society as a whole.

Facilitating Factors

A university is vested with multiple objectives and it has to serve different sections of society. The constant changes that take place in societal expectations with regard to student requirements, requirements of industry and scientific organisations, requirements of government etc., add to the problems of universities. In order to keep pace with these changes, it has to be dynamic and must employ its human and material resources judiciously. In order to succeed it must marshall its resources properly and deploy them carefully. In this connection it is well-worth recalling the importance of the following facilitating factors :

(a) *Participation* : Successful functioning of a university depends, to a large extent, on the participation of the teachers, students and educational administrators in its programmes. Teacher effectiveness depends on : quality of recruits, personal involvement in and dedication to the teaching profession, honest and healthy interaction with students and their commitment to high ideals of education. A teacher plays a pivotal role in moulding the personality of the student not just by way of transmitting what is contained in multifarious books but in interpreting and presenting life itself in positive, purposive and progressive ways to his student. The student deserves top priority in educational planning, because he is the *raison d'etre* for any university. Unfortunately in India the requirements of students have not been adequately taken care of. They have to cope with the unacademic behaviour of faculty and administration on the one hand and survive under unacademic conditions like lack of adequate buildings, equipment, books, etc., on the other. To add to their woes, the approach of the Government has so far been disjointed and piecemeal; often bereft of compassion and understanding. Unless their needs and aspirations in the form of well-planned courses, well-run hostels, good physical plants, libraries and laboratories; health-care and medical facilities; career guidance and placement services and, more importantly, participation in academic and administrative endeavours affecting their life are taken care of, smooth functioning of universities cannot be guaranteed. Finally, the contribution of non-academic administrative staff in the form of allocation of funds and their timely disbursement, proper accounting of money, acquisition of books and equipment, secretarial service, construction and maintenance of buildings, etc. is as important as the teaching staff. Teaching and non-teaching staff constitute the two important cog-wheels of the university administration and unless they join hands in sharing the burden, no university can get along peacefully.

(b) *Adequate physical facilities* : The university should be housed, as far as possible, in a congenial and noise free environment well supported by facilities like equipment, furniture, administrative and teaching centres, hostels, play grounds, recreational areas, heating, ventillating, lighting, etc. These facilities can go a long way in affecting university administration while a good provision of them ensures student satisfaction and cooperation, their denial creates frustration among students and they are likely to

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**Department of Commerce, Sri Venkateswara College, University of Delhi, Dhaula Kuan, New Delhi 110 021.*

become hostile and non-cooperative to the administrators.

(c) *Strong financial support* : The university should be free from financial worries so as to discharge its academic functions in a satisfactory manner. Since the students' tuition and examination fees, the main income sources of almost all universities in developing countries, are generally low, universities have necessarily to depend on the State for grants. Any distrust between the State and the university may spell disaster and may ruin the lives of millions of students and teachers. Obviously, without a regular flow of finance, teaching, research and development activities cannot be carried out in meaningful manner.

(d) *Effective leadership* : Universities, like business organisations, are critically dependent on effective leadership. The Vice-Chancellor selected to sit at the helm of academic and administrative affairs of the university should be able to :

- provide inspiring and imaginative leadership for the entire university;
- help the teaching and non-teaching faculty in solving their problems;
- coordinate the educational and administrative affairs;
- help in planning the educational programmes effectively;
- direct the research and developmental activities and, more importantly;
- get along with Government, UGC and other funding agencies in a competent manner.

University is essentially a community of scholars engaged in the pursuit of academic excellence. Ideas do not grow in isolation; there has to be a proper climate for them to emerge and flourish. The Vice-Chancellor, therefore, should be a man of competence, courage, determination and dynamism. An administrator who lacks these basic qualities and constantly tunes his views to those of his political masters, or plays to the gallery, betrays the ideal of the university.

Growth of Higher Education in India

Most of the universities in India have been set up during the nineteenth and mid-twentieth centuries. The pattern of administrative organisation was very simple. The curriculum was standardised and the enrolment too was very small. The faculty had full freedom in providing directions in which the university should move. After Independence the progress of higher education in India has been quite phenomenal. Presently, we have a total enrolment of over 3.5 million students in our institutions of higher learning and the number is likely to cross 6 million mark by 2000 A.D. The outlays on education during 1951-1985 have also registered a stupendous rise, from 114 crores to over 6,000 crores. The number of universities and university level institutions, too, has increased from 19 in 1947 to 186 in 1990.

Problems of Growth

The unprecedented and unplanned growth of higher education in India has brought many problems which stare at planners continuously. Newspapers highlight the dark side of the moon quite embarrassingly. The whole education system seems to have been irreparably damaged, over the years. It is an open secret that currently degrees are bought and sold, question papers are traded and answer books are manipulated. Examinations have assumed the proportions of a battle. Agitational politics have led to the gradual decomposition of the educational structure. Campus violence, corruption in high places, examination malpractices etc. have become so commonplace, they seem to have lost their newsworthiness. Actually, crisis seems to have been built into the system right from the beginning. The system is saddled with several conflicting and contradictory objectives which nobody seems to understand. The problems of education such as difficulties of adjustment between the system and the demands put forward upon it, structural inconsistencies, excellence matched by rewards, problems of growth and quality, inadequacies of the examination system and its reform, declining standards of teaching and the irrelevance of research present a sorry spectacle of the state of educational structure in India. The system is still dominated, unfortunately, by models and value systems that have been adopted during the colonial regime. Over the years, it has only scrupulously supported double standards, where only a small minority succeed and show excellence and others have been dubbed as mediocre and useless. The unplanned expansion that has taken place in undergraduate education in arts, science and commerce has only made the number of jobless swelling year after year. Lamentably, the expansion has not been uniform in every State and, by and large, has helped only upper middle class to enjoy the fruits of progress. Expansion without corresponding adjustment in qualitative improvement, development of norms of behaviour, job opportunities and administrative efficiency seems to have degenerated most of the universities into 'educational slums'. Militant karmachari unions, teacher's associations, and communal, caste and parochial politics have done incalculable damage to the educational system all these years. To add insult to the injury the education that is imparted in these portals do not nurture the potential of students or their educational aspirations. A student generally does not know what he is studying and why. The threat of unemployment seems to be looming over the students like a Democle's Sword, forcing them to turn against the system even on flimsy grounds. No wonder, the students today are ready to burn buses if fares are increased or break up colleges if fees are enhanced. As things stand now, there is complete breakdown of relationship between the teacher and the student; between the university authorities and the teachers on the one hand and the students on the other; and between the academic and administrative authorities and the karmacharis.

University Administration : A Neglected Area

One of the important reasons for the wretched performance of universities is the poor application of management principles—planning, organising, directing, communicating and controlling—in university affairs. The importance of applying sound management principles has not been recognized by the government despite strong recommendations from Kothari Commission and Gajendragadkar Committee favouring such a step. Students, teachers, administrators, policy makers, funding agencies and the government have expressed resentment and frustration over the performance of universities in more than one way. The disenchantment is growing day by day. In order to apply brakes to these disturbing trends—growing bureaucracy, over emphasis on academic credibility, isolation of students from faculty and administration as also the isolation of the faculty from administration—it is necessary to take a hard look at the whole system from the point of view of a management scientist. In order to keep pace with the cultural, social, economic, technological and political changes, all institutions, whether educational, business or religious, must be managed well. The fundamentals governing the managemenr of a business, a church or a university are the same; the difference lies in the techniques employed and practices followed. All managers are accountable for performance of other people; they plan, make decisions, organize work, motivate people and implement control and so forth. In a similar fashion, the administrators of the university have many responsibilities. They are expected to mobilize, organize and maximize human and material resources in order to achieve educational objectives.

Complexities in University Administration

However, universities differ from other forms of organisation in three important aspects :

* They have multiple goals such as teaching, research, fostering culture and tradition, etc. They have to meet the expectations of society, government and funding agencies in addition to teachers, students and administrative staff.
* They have to manage many independent institutions like schools, colleges, institutions and departments and bring the individual contributions to a common platform.
* The responsibility for making decisions is more widely diffused in a university, because substantial independent authority for making various types of decisions is allocated down to various teachers, departmental heads, to deans and administrative officers. Decisions concerning legislative matters, research programmes student affairs, faculty affairs, relations with government and public etc. have to be taken in a dynamic environment.

Additionally, factors such as the populatio explosion, the rapid advances in the realms of new knowledge, the increased reliance of industry an government on the talents of faculty and scientists t aid in the solution of social problems, the growth o higher education in recent years have made the management of university affairs more complex. Thes problems cannot be solved through trial and erro methods. They cannot be solved merely by addin more administrative personnel, lopping off certai academic courses or by cutting down expenses in a adhoc fashion. They can be solved only by a awareness of the roles of the people involved in th universities as well as the professional knowhow b which the principles of administration can be appli or used. Universities must be viewed as social system designed to accomplish goals and, hence, must b managed like business organisations. A soun efficient and well-planned university administration very essential for stable and meaningful higher educ tion growth and development. Managing universit by the force of rigid rules and regulations, outdat procedures and techniques, have only contributed he notoriety of these institutions in the past. The mount of carping and ridicule that is poured on niversities daily through newspapers and journals hould compel the government, university authorities, eachers and students to introspect and find out asting solutions. Simplistic explanations, pet-ormulae, adhoc measures, short term political olutions have already played havoc with university education. It is high time to review critically how he well-known principles of management have been demolished with criminal ease damaging the process of educational development all these years.

1) *Planning*

It would be platitudinous to say that the phenomenal growth of university enrolment has contributed o the monstrous size of some of the well-known universities in the recent past. Growth, of course, is not a despicable label. However, in India, growth in higher education has been unplanned and hence haphazard. It has manifested itself in several forms like expanding facilities to socially backward, and more recently economically backward, classes at the cost of academic standards, in developing urban education at the cost of rural education, in catering to the needs of middle class people at the cost of other sections of society, in developing certain States at the cost of other States, etc. Unplanned growth has brought in innumerable administrative complexities in addition to multiplying the problems of teaching and research. In many cases, courses have been started and evaluators appointed on adhoc basis without studying the long range viability of various programmes. Lack of facilities—teaching, research, laboratory, space, administrative staff, finances etc. have compelled many administrators to wind up the courses and sometimes the departments even after squandering away the scarce national resources. Indian universities have never been really planned or managed in the contemporary sense. They just muddled along from year to year, carried by their own momentum and steered by their ingrained, outdated procedures and habits. As the Sixth Plan document pointed out, "with the rapid expansion of number of institutions and students, without the corresponding inputs by way of facilities, the role of the universities as advanced centres of teaching and research has been eroded, leading not only to the weakening of science teaching and research but also adversely affecting the climate so essential for higher learning".

The importance of long-range planning has not been recognised as yet by many universities. Short term, adhoc measures have often been advanced as lasting solutions to several perplexing organisational problems. It is small wonder in several universities, courses are being framed without taking care of student interest and faculty support, departments are established after admitting the students, laboratories are established half way through the academic year, library grants are released at the end of the academic year, research grants are made available to institutions and individuals only after several frustrating rounds. Even when funds are released in different universities—running to more than 50 million rupees in each case—they are being utilized in an atmosphere where brutal strength, lung power and political leanings are given more weightage than academic needs and students' requirements. Long range developmental activities are being discounted in favour of piecemeal efforts aimed at mollifying an angry public. In the absence of proper financial control, exercised by funding agencies, UGC and government administrative staff have often invented ingenious ways of falsifying the accounts and, not unnaturally, most of the universities are plagued by serious financial crises these days.

(2) *Management by Objectives*

Universities are, basically, goal attaining instruments, like other organisations. Objectives determine what the university is going to offer, what type of students it prefers, the territorial jurisdiction of the university, what type of relationship it strives to achieve with reference to internal and external agencies. Without clear-cut objectives, universities, like other organisations, may fail to realize their goals. Unfortunately in India, educational planning, policy formulation and educational methods have not received adequate attention of the planners. To compound the offence further, most of the objectives of higher education clash at the point of realization. Compare the contradictions between an open, mass, and elitist system, between different States' educational policies, between desire for knowledge and desire for jobs, between reputed private schools/colleges and government led/sponsored schools/colleges. The present educational system suffers from lack of proper identification and direction of objectives. It is divorced from social, economic and cultural moorings of the country. Bookish knowledge is emphasised to the point of absurdity, at the cost of improving the learning capacities of the students. Knowledge cannot be compressed into a capsule form and cannot be poured into the reluctant throats of students. There should be a sincere attempt on the part of planners to promote education based on healthy emotional and moral values, which have neither been imported nor copied meekly, reflecting our cultural heritage and social history. It is only recently efforts have been made in this direction, again at a prohibitive cost, emphasising our traditional concepts like reverence to the learned rather than to the powerful, social justice, equality of opportunities for all, liberalism and idealism in education, life-long learning, etc. In order to manage universities properly, it is essential to manage them by objectives (MBO). Management by crisis and concealment (MBC) or Management by objections should be discarded immediately. Autocratic ways and arbitrariness should give place to objective assessment, consultative and participative management. MBO helps administrators in identifying the goals properly, through encouraging students and teachers to participate in the formulation of educational objectives, like course contents, academic planning, time schedule, etc. It permits the participants to move closer to realities and outline the priorities for achieving the goals against a time schedule in a meaningful way. Control from above would give place to control from within, as each party would be willing to own responsibility for actions.

(3) *Organisation*

University is an organisation, basically, functioning within the fold of an environment and therefore its interaction with various constituent parts in the environment should be understood clearly. In this connection, the university system can be compared with a manufacturing system, which imports resources, converts them and exports finished products. The systems approach should, therefore, be adopted even in the case of universities. Unfortunately in India there is dearth of systematic empirical research in different aspects of educational administration, such as organisational features, performance and effectiveness of various parts of the university system. Administrators still repose faith and confidence in hierarchial structures, headed by a Vice-Chancellor assisted by administrative and teaching staff. The authority relationships are direct and little interruption in-between is permitted. Jumping the queue is rare and communication often takes a circuitous route. There is very little interaction between constituent parts and each functions in isolation. Several defects and inconsistencies in this model, which have already paralysed many universities merits serious attention :

(a) *Overemphasis on paper work, rules and regulations* : As the authority is centralised, everything goes according to well-defined rules and regulations. An evalanche of paper work is built up in an effort to avoid responsibility by each constituent part in organisational work. People at all levels explicitly seek shelter behind a mountain of rules whenever something goes wrong. The cluster of confused rules and regulations often result in red tapism. The unimaginative and pedestrian rules of audit and accounting, for example, have severely restricted the operational freedom of many university departments in India. There is a clear attempt to stick to rules rather than to achieve results. There is also an exaggerated emphasis on the administrative wing of the university which casts its ugly shadow over the academic functions of the departments.

(b) *Conflicts* : Hierarchial structures suffer from built-in inflexibilities and rigidities. Each party would be striving hard to guard territories zealously and obtain maximum benefit to further departmental/sectional interests. 'Parts mentality' would compel members to sacrifice the larger interests of the university. Jurisdictional disputes are more pronounced and occur with increasing frequency and intensity. There would be a constant tussle between the academic staff and administrative staff, each striving hard to establish supremacy over the other. Often a lopsided picture of the whole set up emerges as to who is working for whom. In an effort to have a bigger slice of the cake, teachers would unhesitatingly resort to trade unionist methods, karmacharis would adopt go-slow and work-to-rule tactics; students employ agitational methods on every pretext and politicians ruthlessly exploit the vulnerability of each party to personal aggrandisement. It is small wonder, that despite many years of educational planning, India has not produced a society like the Royal Society of London.

(c) *Financial wrangles* : Universities are self-governing institutions and enjoy considerable freedom in the selection of students, in appointing their own staff, in determining the contents and standards of attainment of its education and in allocation of income among various categories of expenditure. The last point often engenders bitter conflicts between teaching and administrative staff. Faculty members in universities have to wear many hats. In addition to teaching and research work, they are involved in framing of syllabi, buying equipment for the laboratory, participating in and organising academic programmes, etc. At each stage they are pulled back by administration. Excessive concentration of financial powers in the hands of administrators and the blind insistence on rules and regulations even for petty amounts have compelled many a professors to wait at the door steps of administrators for painfully long hours. Even routine work has to be processed at various levels and takes a circuitous route often, i.e. clerk-section, head-disbursing officer—financial controller, etc. In the process the whole decision making activity is reduced to a feeble walk. An avalanche of paper work gets piled up daily on the administrator's desk impairing his efficiency and effectiveness. The ritual goes on and on and even the Vice-Chancellor is not spared from performing the rites daily. In the absence of functional autonomy at various levels, people turn hesitant and subject everything to the regulatory mechanism in a mechanical manner. Not surprisingly, progress in respect of even routine work in many universities is halting and embarrassingly slow.

(d) *Communication bottlenecks* : The presence of a complex formalism in every university these days prevents both internal and external parties to have a clear view of what is happening in the university. The whole system operates in studied indifference to its clientele and there is total absence of a public relations approach. Nobody knows as to when a particular activity has taken its birth and when it is likely to emerge out of the shell, because the information is preserved in a series of files and circulars. Insistence on formal channels of communication and excessive dependence on vertical lines leads to red tapism and inevitable delay. Message distortions, wrong interpretations, favouritism inevitably creep into the administrative process

(e) *Authority sharing* : In most of the universities authority delegations are unclear. It is often difficult to draw a line between the work of one officer and the other in the hierarchy. Work is distributed more on the basis of convenience and trial and error basis than on the basis of principles and established norms. To complicate matters further, the members operating at various levels are not permitted to handle even routine matters independently.

(4) *Coordination*

The professed goals of a university, or for that matter any organisation, can be achieved only when all the constituent parts such as teachers, colleges, administrative staff, outside service agencies etc. move in a harmonious fashion. There should be proper coordination, vertical as well as horizontal, between staff operating at various levels. The unplanned growth of a large number of affiliated colleges, liaison work with UGC and Government, unruly students, strong teachers' associations, powerful karmachari unions have complicated the coordination problem in every university. Communal, trade union, and political infiltrations have made confusion worse confounded. It is a well-known fact that factors such as lack of clarity in duties and responsibilities of staff, unclear delegations, lack of accountability, absence of clear rules and regulations, inability to adhere to rules and regulations in certain matters, lack of support from faculty, students and top officials have already degenerated the whole administrative set up in various universities to mediocre levels.

(5) *Staffing*

A large section of teachers who man the various departments in different universities are men of ordinary calibre with poor academic and scholastic achievements and lack the qualities of leadership. They have neither the aptitude to learn and develop their personality nor the ability to inspire pupils to peak performance. They are more interested in enjoying and exploiting the benefits of their position rather than utilizing their profession for developing learning capabilities of students. One of the important reasons for this pathetic situation is the faulty selection of the teachers and administrators based not on merit and competence but on political and oxtraneous considerations. As a result, key administrative and academic positions are filled with misfits, incompetents and persons of mediocre qualities and doubtful integrity, paving the way for inefficient administration and uninspiring teaching. Teaching and non-teaching staff get exposure to current developments in teaching and office administration rarely. Training and development of staff is a non-issue in most of the universities. Competent staff rarely get a 'pat on the back.' The whole atmosphere is devoid of any encouragement for merit or superior performance; merit based promotions are rarely encouraged, though attempts have been made by UGC in the recent past to reverse the trend in respect of teaching staff. In the absence of job evaluation schemes, separating the efficient from the inefficient, the non-teaching staff get increments and promotions not for showing meritorious performance but for putting in such and such years of service and for turning out work in a mechanical and listless manner. Job security have already made people working at various levels docile and unproductive. Universities have already paid a high price in the form of strikes, campus violence and closure in some cases for hiring the services of the incompetent and inefficient. Unless this unhealthy trend is reversed immediately, toning up administrative and academic affairs may turn out to be an impossibility.

(6) *Management style*

The administrators of the university have to shoulder many responsibilities. They have to harness physical, monetary and human resources for organisational advantage. They have to motivate, appraise and coordinate the efforts of faculty, administrators, students, and funding agencies in order to insure successful functioning of the 'temples of learning'. The effectiveness of an administrator is a function of many things like the characteristics of the clients, the size and tasks of the organisation, the socio-economic and political influences to which he is exposed, etc. But, more importantly, it is determined by his style and by his philosophy with regard to management of human resources. For want of better phraseology, Douglas McGregor has classified administrative models into two categories : theory X and theory Y. Theory X is negative, traditional and autocratic style while the theory Y is positive, participatory and democratic.

As organisation theorists have pointed out, theory X person might be more suitable in some crisis situations and less appropriate in more routine and formalized situations. Obviously, theory Y may be a more desirable model, reflecting a 'more reality centered view of people' to follow. However, it may not be the best approach for all situations. Autocratic model places exclusive reliance on external control of human behaviour while democratic model relies heavily on self-control and self-regulation. This difference, as McGragor himself pointed out, is the difference between treating people as children and treating them as mature adults. In the management of universities, the top man can utilise both these models profitably by combining them judiciously. Tight control over financial operations may be provided whereas reasonable amount of autonomy and

Autocratic Model Theory X	Democratic Model Theory Y
Assumptions	Assumptions
* Man is by nature indolent, lacks ambition, dislikes responsibility and prefers to be led. * He is self-centered, indifferent to organisational needs, resistive to change, gullible and not very bright.	* People are basically active, enterprising, independent, loyal and want to assume responsibility. * They can exercise self-direction and self-control and show superior performance, if motivated properly.
Carrots * People are motivated by money, incentives and fringe-benefits.	* Participative and behaviour-centered policies aimed at making employees productive.
Sticks * Coercive techniques, tight control over behaviour, threats of punishment.	* Emphasises creating opportunities, removing obstacles, encouraging growth and providing guidance. * Aims at integrating individual goals with organisational demands. * Permits calculated democratization of and enterprise wherein individual growth is encouraged.
Structure	Structure
* Customary pyramid-multi layered, complex.	* Decentralised structure permitting people to plan, organise and control resources in a systematic way.
* Specialization, departmentalization, span of control, delegation of authority, line staff distinctions.	* Operates through such principles as Management by Objectives, participatory management.
Results	Results
* Emphasis on control, coercion and punishment undermines morale and encourages people to sabotage organisational work.	* Emphasis on growth, autonomy and rewards motivates people to peak performance.

freedom may be granted to academicians and administrators in day-to-day affairs. Authoritarian style may prove to be effective in holding the reins at lower levels and democratic, participative style may help in feeling the pulse of the people at higher levels in an appropriate manner. In every way, the climate in a university is significantly influenced by the style adopted by the top man. It is, therefore, absolutely necessary that the top man should be selected carefully and appointed not on tenure basis but on a permanent basis, say for a period of 5 years. Tenure-based appointments make the top people hesitant and compel them to soft-pedal decision making activities. They may fail to provide the necessary guidance and direction to the university with boldness and courage. The total adhocism in respect of appointment of Vice-Chancellors and other key officials in universities has naturally degenerated university administration to mediocre levels and made the universities inviting targets for powerful popular suspicion and resentment.

(7) *Controlling and enforcing discipline*

Absence of a well defined, formal control mechanism is one of the stark realities of university administration in India. In the absence of control, serious financial bunglings, deliberate manipulation and falsification of accounts by administrative staff, misappropriation of funds and pilferage of stationery and other important laboratory articles for personal ends, under or over-utilisation of grants, unauthorised payments hit newspaper headlines daily. Whatever little control is exercised over financial matters, it is rendered ineffective by the complete absence of objectives, standards against which actuals can be measured. Obviously, there is nothing to control without well defined plans. The absence of a rigorous control system has, over the years, encouraged the emergence of unhealthy tendencies such as dishonesty, corruption, gross insubordination, especially at lower levels of administration in many universities.

Of late controlling university affairs has become a 'tight rope walk' for every administrator. Students' interference in administrative affairs—whether in the admissions, selection of teachers, employee promotions and transfers, granting for concessions to the poor and needy, weilding the stick on the unruly and politically motivated staff and students—has become a routine matter. The authorities have to blame themselves for this pathetic spectacle because in many cases teachers and administrators have combined their political acumen and worldly wisdom in exploiting students for personal, sectional or political ends. At times, the people at the top have deliberately flouted the rules unabashedly for securing back-door-entry for persons of their choice in the so-called 'portals of learning' and, in the process, discounting the interests of honest, sincere and competent people. Arbitrary selection procedures, bunglings in admissions, misappropriation of funds, marks scandals, selling of question papers in open market for a price, etc. have reduced academic matters to stinking levels in recent times and the social, economic and political costs of such unscrupulous acts hardly require elaboration and further documentation.

Is There Hope ?

It would be trite to say that the present system of higher education has gone out of gear. The gloomy picture painted above should compel everyone, at least now, to take a hard look at the naked realities more intensely and more critically. The present situation calls for a radical surgical operation, 'a refreshingly fresh approach'. Such an approach should start from the basics. It is high time the administrators learn the fundamentals of managing academic institutions through the application of management processes and techniques. In order to survive and flourish in a dynamic and politically-charged environment, like all other business organisations, a university requires able and efficient administration. Such a step may not be a palliative for all the ills of a university, but in the long run it will certainly help the university to face the problems head-on with courage and find useful solutions. Let's advance the supportive arguments—highlighting the fundamental requirements of efficient university administration—thus :

(1) *Proper Planning*

The importance of long range planning has not been fully realized by university administration so far. In most universities the typical planning activity that is carried out year after year has four basic ingredients : (i) It is short range in outlook, extending only to the next budget year, (ii) It is fragmentary in its coverage, i.e., developing one department at the cost of others or planning departmental allocations without looking into the needs of others, etc., (iii) It has placed emphasis on the supply side of education without taking the demand side into account. The needs of society, students and faculty are not given adequate importance while formulating educational policies, and (iv) It is a non-dynamic kind of planning because adequate effort has not been made to appreciate the changes in methods of instruction, facilities and support for research of faculty and students, standards of admission, for academic performance, etc. The importance of planning in educational institutions needs hardly any elaboration, because it not only provides direction to the institution but also ensures a basis for team work. Without proper planning, university administration becomes random in nature and decisions would become meaningless adhoc choices. Planning in a university means deciding in the present what has to be done in future. In order to succeed in this area the university administration should take care of the following :

- It is advisable to have an independent planning department for the entire university, consisting of people who possess thorough knowledge of what is going on in each department/section of the university. To this end, the department should give adequate representation to academicians, administrators and more importantly, students.
- The department should outline the long run mission of the university in the light of past, current and future developments and additionally, keeping the requirements of students in mind, should determine the goals of the university from time to time.
- A suitable time strategy, with pinpointed focus on achievement on a time scale, should be evolved. To this end, priorities should be fixed, budgetary allocations decided, and procedures and methods outlined.
- The work of each department should be crystallized through charts and schedules indicating the commencement, progress and expected date of finishing a particular part of operation. In order to succeed it is necessary to elicit opinion from staff, and if possible, suitable representation may be given on the proposed programme of action and in the light of suggestions put forward, the plans should be approved and allowed to be translated into action.

(2) *Removing structural inconsistencies*

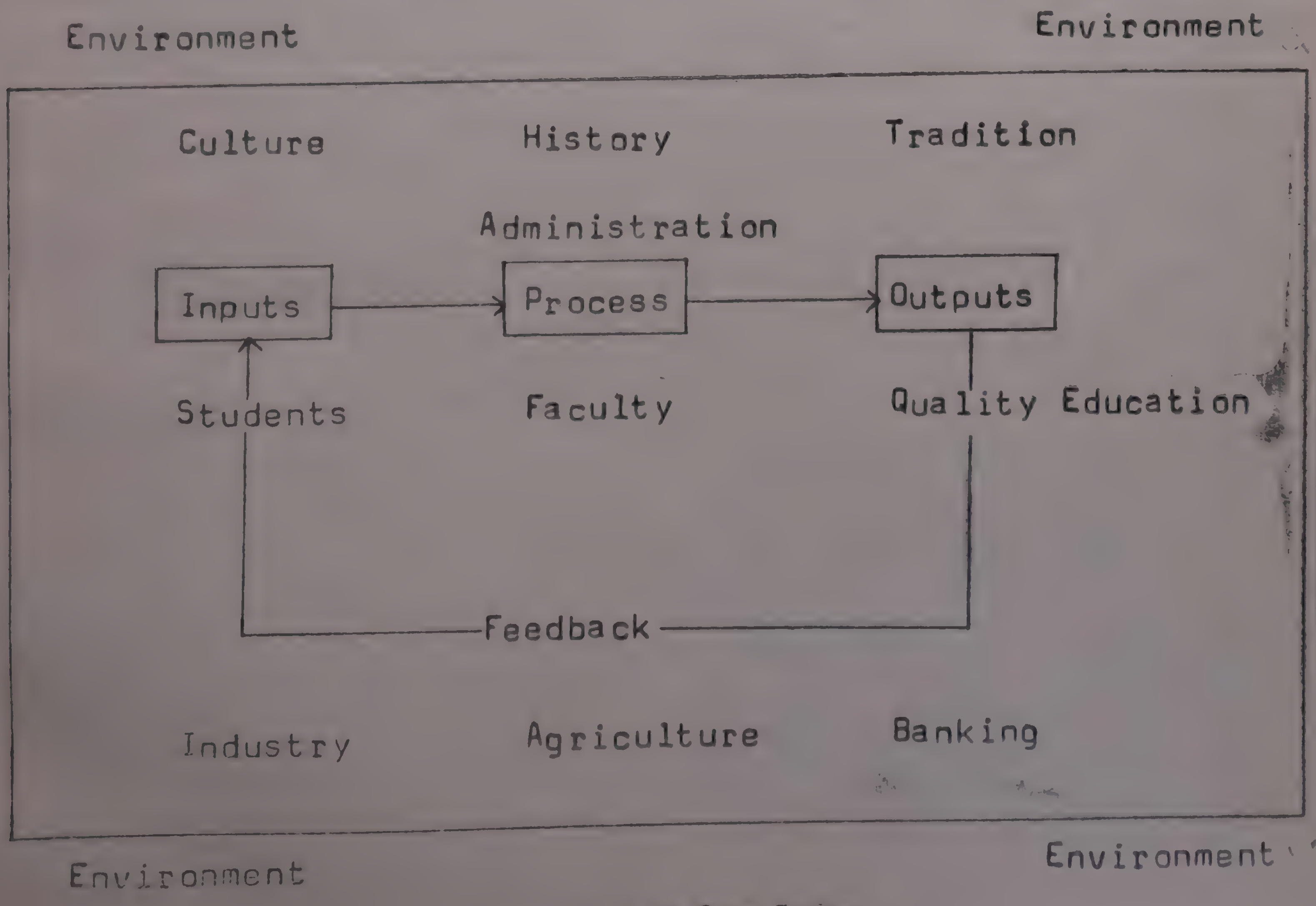
Presently, most of the universities in India are administration oriented consisting of the Chancellor, the Vice-Chancellor, the Court, the Executive Council, the Academic Council, the Deans and other officers and other bodies. It believes in centralisation of authority and decentralisation of responsibility. The principle of unity of command is not followed honestly and often higher authorities short-circuit the chain of command and encourage lower level people, wielding political influence or having powerful hold over students/faculty, to bypass official channels. The span of supervision is generally wide. Delegation and decentralisation of authority receive only lip service. Responsibility accounting is totally missing in the whole system. Often, members try to avoid responsibility for actions, by constituting committees for managing important affairs. The oft-repeated quotation that a committee is a 'group of unfits engaged by the unwilling to do the unnecessary' is well worth remembering. In view of the above structural defects there is urgent need to look into other alternatives in order to tone up the administrative functioning in all universities.

SYSTEMS MODEL

The present organisational structure of the universities is no longer suitable for the fast and better development of the required quality education. There is an urgent need to overhaul and streamline the structure along business lines. Critics have suggested the participative model in place of the traditional hierarchial model. However, attempts to improve the situation by switching over to participative models have not produced any significant results. Faculty and student participation in educational planning, copied from Western traditions, has proved to be a farce at times. In many cases the various committees created for the purpose of improving academic standards, examination reform, and course planning have come out with ridiculous and impracticable suggestions, based on consensus and obviously, not best under the circumstances. In view of the above adverse results, it is time for us to ponder over the organisational aspects of modern universities more intensely. A bold and imaginative approach is necessary to innovate, to experiment and to initiate a process of restructuring the entire edifice of our higher education. A systems approach advocating interrelationships and interdependence of each constituent part in the university should be adopted. All parties must view higher education as a truly liberating influence on young brains whose basic aim is to cement the bonds of national unity and integration. The university should be viewed as an open system, receiving inputs from various disciplines like industry, agriculture, banking, finance, culture, history, etc.

A system is a set of interrelated parts. It is a group of interrelated but separate elements working towards a common goal. The arrangement of elements must be orderly, there must be proper communication facilitating interaction between the elements and finally, the interaction should lead to achievement of goals. A university, as shown below, is made up of students, teachers administrative and non-teaching staff who relate to one another in an orderly manner. What one group does has serious implications for the other. So there should be proper communication and perfect understanding between these groups in order to achieve the overall goal of imparting quality education. Thus, the university operations should be viewed in terms of basic elements. Physical facilities, monetary resources are the inputs, received from the environment, which are transformed with the help of administration and faculty into outputs, once again into the environment. Every system has boundaries that separate it from other systems and from its environment. The elements out of the system represent the system's external environment and those in the system represent the system's internal environment, as shown in the diagram below. The term feedback refers to the information regarding the actual performance of the system. It is a process by which the university gathers and evaluates information about how the various parts are performing in imparting quality education and uses such information to guide, direct and control the ctivities of the university in future.

In order to encourage systems thinking on the part of administrators, there is an urgent need to chalk out a programme of action jointly planned by academicians, administrators and students, that is reflective of the broad requirements of the country rather than merely traversing along traditional routes producing degree-holders in a mechanical manner. To this end, jobs should be delinked from degrees and the drive for vocationalisation of courses should be intensified. There should be complete freedom for the student to choose a career of his choice, not influenced by others, that enables him to realize his potential fully. At present education has ceased to be a creative endeavour for both the teacher and the taught. The existing structures have not permitted any innovations in educational planning. To reverse the trend formal, full-time courses should be gradually replaced by innovations in non-formal, correspondence courses, which would be within the reach of the majority. The establishment of the National Open University during the Seventh Plan period is laudable and is reflective of this thinking only. Additionally, the relevance and usefulness of various programmes that have been initiated should be subjected to periodical review in terms of what is taught, how it is taught and how it is learnt. The utility of each



University as an Open System

course should be viewed in the light of its contribution to furtherance of knowledge rather than to the labour market. Lack of coordination between academics and administrators on the one hand and administrators and students on the other hand has contributed to several coordination problems in the recent past. Systems thinking clears the fog surrounding such narrow ideas; it helps the parties realize the importance of moving together, rather than moving in different directions. To maximise the output of the total system, parts should move in unison. This emphasis on inter-relatedness of the parts of the university, a major contribution of the systems theory helps in avoiding some of the pitfalls of 'tunnel vision' or 'components mentality' in which individual parts, i.e. teachers, karmacharis, students, work out their own relationships in a haphazard and useless manner.

(3) *Internal Administration*

To improve internal administration, the following suggestions need be looked into seriously and keeping the unique requirements of each university, appropriate remedial measures should be taken :

(a) *Clear policies* : The university should be guided by policies defining the role of each unit, the manner in which the role should be carried out and the rules of conduct for each organisational unit.

(b) *Grouping of activities* : There should be systematic grouping of activities along scientific lines.

(c) *Proper span* : It is necessary to specify the span of supervision of each commanding officer in clear terms. Also clear distinctions are required among line, staff and administrative control and these should be made known to all members in the organisation.

(d) *Requisite authority* : Members should be given requisite authority to perform the assigned tasks. To prevent insubordination, they should not be permitted to short-circuit official lines, especially for personal ends.

(e) *Accountability and decentralisation* : Accountability should be pinpointed on section/department/individual for each administrative or academic activity. Decentralisation of authority exposes lower level personnel to decision making challenges and makes their work more enjoyable. It is therefore, necessary to permit decentralisation to the extent possible so as to encourage member participation and commitment to assigned tasks.

(f) *Emphasis on academic work* : The whole emphasis should be on promoting educational activities rather than administrative work. To this end, administrative lines can be tailored to size and the non-academic positions should be filled by persons having aptitude and willingness to serve students diligently.

(g) *Communication* : Most universities in India rely on the downward communication channel which often results in staff and faculty grievances. In order to improve communication between members, it is not only essential to encourage upward communication, to receive the reactions and opinions of the university community, but also improve the downward system so as to give due publicity to the decisions taken by university authorities during any given period. To improve the decision making process in the organisation, it is also necessary to set up a Management Information System (MIS). MIS refers to a computer-based system for providing decision makers with information relevant to their areas of concerns.

(h) *Coordination* : Organisational planning would be a futile exercise unless all members of the university blend their efforts effectively in the implementation of plans. To this end, the powers to coordinate the efforts of a specified number of subordinates should be clearly delegated to competent officers at various levels in the university.

(i) *Scientific selection and training of personnel* : Special emphasis should be placed strongly on acquiring able scholars and administrators as deans and departmental heads. Factors such as regionalism, 'sons of the soil' inbreeding, personal bias, caste feelings should not be allowed to vitiate the staff selection process. It is high time the doors of this profession are opened only to talented and capable individuals. To encourage commitment and effective participation in academic pursuits, faculty and administration should be encouraged through attractive incentive and compensation plans, research facilities, liberal grants laboratory facilities, adequate promotional avenues, etc. Additionally, the university should provide training and development opportunities for teaching and non-teaching staff to develop their skills and expand their knowledge from time to time.

(j) *Rigorous control :* Finally, it is absolutely necessary to subject the work of each and every constituent part to a system of rigorous control. Such a system should enable authorities to measure progress of each academic or non academic activity at periodic intervals and help them institute rectificational measures in time. In order to insure effective control, it is necessary to strengthen the planning process in universities.

(4) *Effective leadership*

In the final analysis, the quality of an institution depends not so much on its formal structure as on the quality and competence of the men at the top. Unless universities are managed by capable people, it is very difficult to put an end to all the ills of the present educational system. A great Vice Chancellor can do more to tone up the quality of a university than impressive programmes of mere academic reform.

Conclusion

A good deal of ineffective and inefficient performance of the universities in India may be attributed to unsound administrative policies and practices. The situation can be remedied only through the application of management principles and practices. There is nothing wrong in expanding universities in all directions, provided the fruits of growth are shared by all. The university should stand for quality and not for the quantity in student admissions, professorial recruitment, teaching courses and physical facilities. It should be for the students, the teachers and the non-teaching staff, just as a government is for the people. In order to survive and flourish in a dynamic environment, all these constituent parts should move hand in hand and contribute to the improvement of academic standards with dedication and sincerity. In order to integrate these unrelated resources—human, material and monetary—into a total system for objective accomplishment, sound management practices should be adopted in every organisation. □

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International Women's Day Celebrations

The Department of English of the Mother Teresa Women's University recently organised a two-day seminar on "Indian Women : A Challenge to Our Creative Writers" on the occasion of International Women's Day. Speaking at the inaugural function, Dr. Mary T. David referred to the plight of women in India today and said that the woman question in India was becoming more urgent than ever before because of the diversity of the nature of women's roles. Female infanticide, dowry deaths--dowry suicides, rape in and out of custody—the resurgence of sati—the list and the number of victims grows. Legislation was no remedy. It was the role of creative writers to arouse awareness of these problems. Literature, she said, had been instrumental for social changes, for revolutions, and the nature of literature, its inmate capacity for edification and reform had not changed. So the responsibilities of the creative writers were too great and it was the duty of every committed writer to rise up to the occasion and voice forth his feelings.

The Registrar of the University, Dr. (Mrs.) Mary Josephine Louis in her presidential address spoke of the impact of mass media on the public. She also reiterated the responsibilities and duties of the creative writers towards emancipating or enhancing the status of women in India.

Ms. Sivasankari stressed the need of creating positive role models for women to follow like Rani Jhansi and the women involved in the chipko movement. She also said that the writers should never give solutions to problems or issues. Both, the negative and positive angles of a problems should be well discussed by the author but the decision should be made by the individuals. She condemned suicide by many women saying that it was nothing but escapism.

Dr. Prema Nandkumar said how Anie Besant and Sr. Nivedita greatly inspired the people. She said that to live and suffer and challenge the problems and face the consequences was better than setting a bad example for others to follow. She totally dispised cowardice and suicide and said that the writers should never ever present such characters for their vast reading public. By setting a positive example the writers could really create a better future for women, she added.

Dr. Gopalan Shastri said that the writers should come down from the ivory towers and look at the day to day problems and issues of the Indian women and try to give some remedies. As a case of illustration he took the novels of Anita Desai and said how the fiction has turned inwards now-a-days. Questions of autonomy and self were being dealt with primarily by our writers and this had to a great extent helped in women's self emancipation. Writers should try to arouse the self worth in women which would make them analyse their problems and tackle the situations very effectively.

Dr. (Mrs.) Mary Josephine Louis, who also presided over the valedictory function, spoke of the significance of the Women's Day and the role of every woman in uplifting and working for the betterment of her sisters.

A debate on 'Who should work more for Women's Freedom—Men or Women?, an Elocution competition on 'Are Indian Women Free?', an Essay competition on 'If I had the power to restructure the Indian society' and a poetry competition on 'The Female Child' were also held on the occasion.

Indian Constitution & Polity

The Andhra Pradesh Open University organised an Extension Lecture and Symposium on 'Indian Constitution & Polity' at Hyderabad recently. Justice O. Chinnapa Reddy, Former Judge of the Supreme Court, delivered the Inagural Extension Lecture "Forty Years of the Constitution : A Lawyer's View". Justice Chinnapa Reddy stressed the need for effective legislation of various policies being planned for the prosperity of the nation.

Tracing the history of the Indian constitution, Justice Chinnapa Reddy said that forty years ago. the Indian people embarked upon a journey in quest of Justice—Social, Economic & Political; Liberty of thought, expression, belief, faith and worship, Equality of status and opportunity, and Fraternity assuring dignity of the individual and the unity and integrity of the nation. The ship in which we embarked on the journey was the ship of a democratic republic. In this course of the voyage we had reinforced and strengthend our ship with shining new plates of socialism, and secularism, he added.

Justice Chinnapa Reddy observed that forty years have passed and now it was time for serious introspection as to how far we have progressed, how far we had deviated from the course set by the campass, what we had to our credit and what were our failures? In this context, Justice Chinnapa Reddy observed that during these forty years the Indian Constitution was amended 62 times.

Making a critical analysis of the various developments that took place after the constitution came into force, Justice Chinnapa Reddy observed that the Indian Constitution makers were undoubtedly inspired by the three great western revolutions, the American, the French and the Russian Revolution. The result was the dichotomy of the Indian constitution which projected certain individual freedoms and rights as basic, and incorporated them into the constitution as fundamental rights. Some of these rights were made subject to reasonable restrictions and there was also provision for preventive detention. Justice Reddy opined that they were intended to foster the ideal of a liberal political democracy and to prevent the establishment of authoritarian rule. Referring to the Directive Principles he said that it required the state to direct its policies towards ensuring that the ownership and control of the material resources of the community are so distributed as to serve the common good and that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment. If fundamental rights are the Indian people's document for democratic freedom, the directive principles are a passport to economic and social freedom, he observed.

Prof. R.V.R. Chandrasekhara Rao, Vice-Chancellor, Andhra Pradesh Open University, who presided, said that the University had organised this lecture series on Indian Constitution and Polity for the first time. Apart from the extension education function being performed by the University, these events will bring the University closer to the general public. The Vice-Chancellor also announced that these extension lectures would be published and distributed to all the study centres of the University for the benefit of students who were pursuing various courses.

Project Aquaculture

Sri Sathya Sai Institute of Higher Learning, Prasanthi Nilayam, has undertaken a project "Aquaculture with reference to water quality and water management". The objective of the project is to survey the water quality, both surface and underground of Anantapur District, in order to determine its suitability for agriculture, aquaculture and drinking water supply for human population. Special attention is being paid to the role of fluorides in particular and minerals in general.

A water quality survey of Anantapur District, covering an area of 19,125 sq. km. with 127 villages and 15 towns, has been completed. This is followed by a survey of fluoride contents of 98 food items commonly used in this part of the country and an epidemiological survey of dental fluorosis in human population with particular reference to school-going children supplemented with a radiological survey of skeletal fluorosis in other age groups also.

Considering the seriousness of the problem of excess fluoride in water, a systematic search for alternative technology for defluoridation has been carried out since the methods and designs so far employed in India are found to be unsatisfactory, while those elsewhere in the world (Japan, China, USA, South Africa, etc.) are either found unsuitable to our conditions or other wise unsatisfactory.

After preliminary laboratory experiments, activated alumina has been found to be the most suitable for reducing fluoride content in water prevailing in this part of the world. This has been followed by a series of experimental designs for defluoridation of both the domestic and community use. The domestic model, after preliminary trials lasting over an year, was put on field trials. About 38 families voluntarily offered to use the model for defluoridation of their domestic drinking water supply.

After six months of use, survey of the utility and effectiveness has been carried out and it is found that every family, who used the model, felt happy as they experienced relief from many of the symptoms due to intake of excess fluoride in water. These symptoms included skeletal and non-skeletal fluorosis such as pain in the foot, joints, back, weakness of upper and lower limbs and difficulty in raising from the squatting position particularly in higher age groups. Since the families using the model were intelligent, educated and responsible persons, the extension programme is yielding very valuable information.

This project is being continued with emphasis on "Water quality and water management in relation to public health and environmental pollution". Extension programmes and laboratory investigations are in progress on a more extensive and intensive scale.

Workshop on Research Methods

A two-day workshop on 'Research Methods and Quantitative Techniques' was recently held at Gandhigram Rural Institute (Deemed University). Inaugurating the workshop, Mr. D.K. Oza, Vice - Chancellor, Gandhigram Rural Institute (GRI) said that research should be socially relevant and generate practical solutions to pressing problems facing people in villages. Dr. N. Radhakrishnan, Co-ordinator, explained the mechanics of the workshop.

In the business sessions that followed, experts from various universities in Tamil Nadu and 30 participants comprising teachers and researchers from various colleges exchanged views.

A significant feature of the workshop was the discussion of specific research paradigms by individual scholars in three distinct groups for Science, Social Science and Humanities separately, where the participants received clarity and clues on their respective problems from both the resource persons as well as fellow participants. Dr. Chellappan, Professor of English, Bharathidasan University, Tiruchirapalli who earlier chaired the Humanities group, delivered the valedictory address.

Workshop on Creative Writing in English

A Workshop on Creative Writing in English, jointly sponsored the United States Educational Foundation in India (USEFI) and IIT-Madras, was recently organized by the Humanities and Social Sciences Department, IIT-Madras. It aimed at providing a forum for discussing and publishing the creative efforts of aspiring faculty and students of the Institute as well as the educational institutions in the city. The Guest Faculty included Prof. John Rothfork, Fulbright Visiting Professor, Prof. Krishnamoorthy Aithal, Prof. G.S. Balaram Gupta, Dr. V.P. Ranga Rao, Dr. Prema Nandakumar and Shri Bibu Padhi.

Futurology Workshop

A Futurology Workshop will be organised from April 2-4, 1990, at Regional Research Laboratory, Jammu. Sponsored by Department of Science and Technology (DST), Govt. of India, the Workshop proposes to create an awareness on future problems and needs and identify thrust areas during the next 25 years. The workshop will cover (i) Future research methodologies, (ii) Emerging science and technologies, and (iii) Technology societal nexus.

Representatives from industrial houses, R & D centres, Universities, Govt. departments and educational centres are expected to take part in the Workshop. Besides others, Dr. S.C. Seth, Director and Head, Technology Forecasting and Future Studies Unit of DST will deliver special lecture on the theme of the Workshop.

Further details can be had from Dr. J.S. Chawla, Programme Co-ordinator, Regional Research Laboratory, Jammu-180001.

Indo-Seychelles Cultural Pact

Under an Indo-Seychelles Cultural Exchange Programme for the years 1990-92, the two countries have agreed to exchange delegations to study each other's educational system, establish contacts, exchange views and facilitate participation of two to three university level teachers or specialists in conferences, seminars and other academic events as also provide facilities for post-conference visits to centres of their interest. Both sides will also exchange publications dealing with higher education.

At the level of tertiary (post-secondary) education too the two countries will exchange upto three teachers / specialists for lecture-cum-study and identify areas of cooperation between institutions of the both sides.

The University Grants Commission has been assigned the responsibilities by the Government of India to implement these programmes.

Society for Commonwealth Studies to Meet at Anantapur

The Second Annual Conference of the Indian Society for Commonwealth Studies (ISCS) will be held at Sri Krishnadevaraya University, Anantapur (A.P.) from 22nd March to 24th March, 1990, said Prof. K. Venkata Reddy, Professor of English, who is the Local Secretary of the Conference. About 100 delegates from India and Commonwealth countries like Australia, New Zealand and Canada are expected to participate in the three day International Conference on the theme "Tradition and Modernity in Commonwealth Writing". Besides presentation of scholarly papers on the theme of the conference, there will be special lectures on significant aspects of Commonwealth Literature by experts in the field. There will be a poetry reading session too. Major poets like Nissim Ezekiel, Jayant Mahapatra, Kamala Das and a host of other poets are expected to present their poems.

Veteran Indian Novelist and Social reformer, Mulk Raj Anand, who is the Chairman of the Indian Society for Commonwealth Studies, will be attending the conference with yet another famous novelist, Chaman Nahal.

News from UGC

INSAT-1B Programme of UGC

Between 24th March to 31st March, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

24.3.90

"Home of Porcelain in South China"
"Alcatraz"
"Music of North India : Bhimsen Joshi"

25.3.90

No Telecast

26.3.90

"Classical Mechanics - VIII : Minimal Principles"
"Entrepreneur & Enterprise - Case Study - III"
"Betelvine Cultivation - I"

27.3.90

Nitric Acid"
"Introduction to Visual Aids"
"Echocardiography of Foetal Heart"

28.3.90

"Rural Housing : Planning Aspects of Rural Housing"
"The Indian National Movement : The Beginning"
"Organisation & Expression of Genes-II"

29.3.90

"Introduction to Computers - VI : Basics - II"
"Raw Materials : Tin"
"Everyone Sang"

30.3.90

"Gift of Numbrs - I"
"Invisible Work"
"Drought in Desert"

31.3.90

"University Round Up"
"The Pursuit"

2nd Transmission

12.00 noon to 1.00 p.m.

24.3.90

"Spectators in a Peasant Land - II"
"Folk Dances of India"
"Purple-Sand Earthenware"

25.3.90

No Telecast

26.3.90

"Classical Mechanics - XIII : Rigid Bodies - Dynamics"
"Understanding Systems"
"Bajra : An Important Crop of Arid Zone"

27.3.90

"Panel Discussion on Industrial and Technological Application of Carbohydrates"
"Science & Technology and the Universities"
"Blood Transfusion and AIDS"

28.3.90

"Basic Principles of I.C. Engines"
"Forts of Deccan - Bidar"
"Dispersal of Seeds and Fruits"

29.3.90

"Graphics with Microcomputer - V : Concepts of Animotion"
"Ethnographic Film - Different Perspectives"
"Literature and Society"

30.3.90

"Kodaikanal Observatory"
"Defence Mechanisms- Repression"
"Ecosystem - I : The Whispering Brook"

31.3.90

"University Round Up"
"The Pursuit"

National Lectureships

The University Grants Commission has approved the award of National Lectureships to 64 outstanding teachers and research scholars from higher education system in the country for the year 1989-90 and 1990-91. The awardee scholars will be invited by the Commission to visit three to four universities and colleges to deliver a series of lectures in their fields of specialisation and participate in academic programmes as also establish effective contacts with teachers and research workers in the host institutions.

While finalising the programmes of visits to universities and colleges a National Lecturer is expected to include in his/her programme at least one developing university located in a backward region so that the teachers and students in such a university may also get the benefit of the specialised knowledge and latest development in the concerned discipline.

The National Lecturers, in the course of their lectures, besides reviewing the major developments in their fields of specialization, would also report on their relevance to developments in the related subjects.

Under operation by the Commission since 1970, the scheme of National Lectureship is intended to promote academic standards in the universities and colleges.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertation as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

- The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles Culled from Periodicals Received in the AIU Library during February, 1990.

EDUCATIONAL PHILOSOPHY

Ediger, Marlow. Johann Pestalozzi and the curriculum. *New Frontiers Edn.* 19(4), 1989, 417-22.

Man Mohan Lal. Nehru as an educational thinker. *Yojana* 33(24), 1990, 28-31.

Williams, Kevin The gift of an interval: Michael Oakeshott's idea of a university education. *British J. Ednl. Studies* 37(4), 1989, 384-97.

EDUCATIONAL PSYCHOLOGY

Snow, Richard E. Aptitude, instruction, and individual development. *Intl. J. Ednl. Res.* 13(8). 1989, 869-81.

EDUCATIONAL PLANNING

Brownstein, L. University education in a free society: A preliminary defence. *Hr. Edn. Rev.* 22(1), 1989, 6-20.

Rajeswari, A.R. Manpower development in science and technology in India. *Manpower J.* 23(2), 1987, 1-12.

EDUCATIONAL ADMINISTRATION

Bennett, John B. The dean and the department chair: Toward greater collaboration. *Ednl. Record* 71(1), 1990, 24-26.

Bisaliah, S. and others. Analysis of manpower complementarity in Indian agricultural universities. *Manpower J.* 23(2), 1987, 33-50.

Chait, Richard and Green, Madeleine. Parlez-vous presidentialese? A light-hearted look at presidential lexicon. *Ednl. Record* 71(1), 1990, 19-21.

Diner, Steven J. The common denominator: Faculty's potential in the campus community. *Ednl. Record* 70(3/4), 1989, 17-21.

Fisher, James L and Tack, Martha W. Effective college president. *Ednl. Record* 71(1), 1990, 6-10.

Fleischauer, John F. Thoughts of a small college dean on management. *Ednl. Record* 71(1), 1990, 22-23.

Gray, Harry L and Hoy, Charles H. University development: The balance between research and teaching. *Hr. Edn. Rev.* 22(1), 1989, 35-46.

Hodkinson, Phil. Crossing the academic/vocational divide: Personal effectiveness and autonomy as an integrating theme in post-16 education. *British J, Ednl. Studies* 37(4), 1989, 369-83.

Plante, Patricia R. An administrator will yearn for the classroom: Myth or reality? *Ednl. Record* 71(1), 1990, 27-30.

Pressley, Michael and others. Good information processing: What it is and how education can promote it? *Intl. J. Ednl. Res.* 13(8), 1989, 857-67.

CURRICULUM

Amrik Singh. Higher Education in A.D. 2000. *Mainstream* 28(18), 1990, 15-19.

Amrik Singh. Higher education in A.D. 2000-II. *Mainstream* 28(19), 1990, 17-22, 28.

EDUCATIONAL RESEARCH

Savari Raj, G.A. Socially relevant research in positive sciences. *New Frontiers Edn.* 19(4), 1989, 423-26.

EVALUATION

Guan, Toh Poh and Gopal, Saminanthan. Application of item response theory in standard setting. *Studies Ednl. Eval.* 15(3), 1989, 285-93.

Hamilton, J.S. and McLone, R.R. Education validity and the setting of reliable standards. *Studies Ednl. Eval*, 15(3), 1989, 295-308.

Prien, Borge. How to predetermine the difficulty of items of examinations and standardized tests. *Studies Ednl. Eval.* 15(3), 1989, 309-17.

Weinert, Franz E. and others. Quality of instruction and achievement outcomes. *Intl. J. Ednl. Res.* 13(8), 1989, 895-914.

Zicky, Michael. Methods of setting standards of performance on criterion referenced tests. *Studies Ednl. Eval.* 15(3) 1989, 335-38.

ECONOMICS OF EDUCATION

Schleicher, Andreas and Postlethwaite, T. Neville. Education aid to developing countries : A general or differentiated policy ? *Studies Ednl. Eval.* 15(3), 1989, 339-57.

Sen, Amitabha. Forging linkages between higher education and employment. *Manpower J.* 23(3), 1987, 1-10.

PHYSICAL EDUCATION & SPORTS

Haak, Harold. Athletics : Presidential problems and prospects. *Ednl. Record* 71(1), 1990, 51-53.

VOCATIONAL EDUCATION

Coffey, David. Vocational education : The way forward ? *British J. Ednl. Studies.* 37(4), 1989, 358-68.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Okorie, N.C. Change and innovation in Nigeria's educational scene. *New Frontiers Edn.* 19(4), 1989, 427-38.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Sharma, Kashi Kailash Nath. *The effect of maternal foetal ABO blood group incompatibility on the postnatal growth and development of the Khairwar tribal children of Madhya Pradesh.* HS Gour. Prof. P.K. Shrivastava, Department of Anthropology, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Biology

1. Hemavathi, E. *A study on the genotoxic effects of a group of carbamate fungicides.* Mangalore. Dr. M. Abdul Rahiman, Prof. and Head, Department of Biosciences, Mangalore University, Mangalagangotri.

2. Satpathy, Gitarani. *Effect of malathionan organophosphorus pesticides on microbial population, biomass and metabolism in a tropical grassland soil.* Sambalpur. Dr. N. Behera, Lecturer, School of Life Sciences, Sambalpur University, Jyoti Vihar, Burla.

Biophysics

1. Geetha, Y.S. *Studies on geometrical aspects of metal coordination.* IISc.

2. Gopalakrishnan, B. *Protein—DNA interactions : A computer modelling study.* IISc.

3. Kodandapani, R. *Crystal structure of the low humidity form of tetragonal hen egg-white lysozyme.* IISc.

Biochemistry

1. Bandyopadhyay, Syamali. *Role of different drugs and agents on prolactin secretion : A study by perifusion technique.* Calcutta.

2. Bhattacharyya, Rupa. *Studies on sperm nucleic acids and nucleoproteins.* Calcutta.

3. Bidwai, Anil Kumar. *Biochemical studies on the antifertility effects of some tribal medicinal plants.* Durgawati. Dr. R.R. Bodkhe, Head, Department of Biochemistry, Government Medical College, Jabalpur.

4. Gaikwad, Joel Solomon. *Studies on glucosidase of the thermophilic fungus, Sporotrichum thermophile.* IISc.

5. Gupta, Anita. *Colitis phage lytic enzyme and its gene.* IISc.

6. Khara, Darshan Kaur. *Effect of cadmium on photosynthetic efficiency of wheat, Triticum aestivum L.* HAU.

7. Suri, Neelam. *Antibodies specific to deoxyribomono-, di—and trinucleotides : Sequence dependent binding to ds DNA.* IISc.

8. Suryanarayana, S. *Structure and stability of Belladonna mottle virus.* IISc.

9. Vaishnav, Mahima Y. *Studies on regulation of testicular function by gonadotropins : Regulation of spermatogenesis and Leydig cell function in the rat by follicle stimulating hormone.* IISc.

Microbiology

1. Devajyothi, C. *Purification and characterization of DNA cytosine 5-methyltransferase in a mealybug, Planococcus lilacipus and studies on its modulation during development.* IISc.

2. Patel, Umeshkumar Dadabhai. *Studies on different factors influencing oflataxin synthesis by Aspergillus parasitons and its inactivation.* Baroda.

3. Shobha Ram. *Studies on incidence of diarrhoeagenic organisms of intestinal origin in food and faeces in a North Indian community with emphasis on immunological relatedness of enterotoxin of Escherichia coli with other groups.* Osmania.

4. Vaishnav, Y.N, *Effect of nucleic acid reactive antibodies on transformed cells grown in vitro.* IISc.

Botany

1. Ajay Kumar. *Cytological investigations on Parthenium hysterophorus L. offected by some antibiotics and fungal filtrates.* Magadh.

2. Biswas, Arunabha. *Studies on pathogenic fungi of sugarcane research station, Bethuadahari, Nadia.* Calcutta.

3. Gangwar, Bhagwan Das. *Studies on salt tolerance in sugarcane.* Rohilkhand. Dr. R.G. Singh, U.P. Council of Sugarcane Research, Shahjahanpur.

4. Gupta, Virendra Pal. *Studies on a virus causing mosaice disease on brinjal, Solanum melongena L.* AMU. Dr. S.Q.A. Naqvi.

5. Gurudeva, M.R. *Studies on the Orchidaceae.* Bangalore. Dr. D.A. Govindappa, Retd., Department of Botany, Bangalore University, Bangalore.

6. Haider, Syed Rais. *Studies on identity of Meloidogyne species and their interactions in vegetable crops pathosystem.* AMU. Dr. M. Wajid Khan, Reader, Department of Botany, Aligarh Muslim University. Aligarh.

7. Iqbal Habid. *Hydrobiological studies on River Nakatia at Bareilly,* Rohilkhand. Dr. U.C. Pandey, Bareilly College, Bareilly.

8. Jabri, Mohammed Rafiq Ahmed. *Characterization of a virus inducing mosaic in carrot, Daucus carota var sativa L.* AMU. Prof. Khalid Mahmood, Department of Botany, Aligarh Muslim University, Aligarh.

9. Jain, Harish Chandra. *Critical analysis of herbicidal and cultural weed management in soybean, Glycine max (L.) Merrill.* Durgawati. Dr. J P. Tiwari, Assoc. Prof., Department of Agronomy, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur and Dr. S.K Hasija, Prof. and Head, Department of Bio-Sciences, Rani Durgawati Vishwavidyalaya, Jabalpur.

10. Jeet Ram. *Phytosociology and primary productivity of an alpine grass land in Garhwal Himalaya.* Kumaun. Dr. J.S. Singh and Sri S.P. Singh.

11. Kuriachen, P.M. *Development ultrastructural and histochemistry of pericarps af some Asclepiadaceae and Periplocaceae.* Patel. Dr. Y.S. Dave, Reader, Department of Biosciences, Sardar Patel University, Vallabh Vidyanagar.

12. Pande, S.K. *Studies on mycotoxin producing fungi in food and food stuffs of Gaula catchment area of Nainital District with special reference to aflatoxin producing species.* Kumaun. Dr. B.S. Mehrotra.

13. Poornachander, G. *Organogenesis and somatic embryogenesis in some self incompatible plants.* Kakatiya. Prof. Bir Bahadur, Head, Department of Botany, Kakatiya University, Warangal.

14. Prolaram, B. *Studies on mutagenesis and tissue culture in red pepper.* Kakatiya. Dr. K. Subhash, Reader, Department of Botany, Kakatiya University, Warangal.

15. Ramalakshmi. Y. *Biological study of the economically important marine algae.* Bhavnagar. Dr. V.D. Chauhan, Discipline Co-ordinator, Central Salt and Marine Chemicals Research Institute, Bhavnagar.

16. Sampoorna, K. Amitha. *Studies on in vivo and in vitro interaction of some pesticides of Vigna sinensis (L.) Savi.* Kakatiya. Prof. Digamber Rao, Department of Botany, Kakatiya University, Warangal.

17. Saquib, Mohammad. *Studies on weed biology of agroecosystems in relation to environmental pollution.* AMU. Mr. Ziauddin Ahmad, Reader, Department of Botany, Aligarh Muslim University, Aligarh.

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19. Shashi Rani. *Taxonomic and physiological studies of mucorales.* Kumaun. Dr. B S. Mehrotra.

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21. Singh, Pashupati Nath. *Physiological studies on salt tolerance in Sorghum bicolor (L) Moench.* Rohilkhand. Dr. Arun Kumar, Hindu College, Moradabad.

22. Suresh, P.V. *Studies on the mangroves of the Karnataka part of the Malabar Coast. Bangalore.* Dr. T. Ananda Rao, Principal Investigator, and Dr. R K. Somashekar, Department of Botany, Bangalore University, Bangalore.

23. Tomar, Uttar Kumar. *In Vitro morphogenesis in some fabaceous trees—Albizzia spp.* Delhi.

24. Vidhyadhareswara Rao, Vitta V.S. *Ecological studies in deciduous ecosystem of North Dangs Forest.* Bhavnagar. Dr. B R. Pandit, Reader, Department of Life Sciences, Bhavnagar University, Bhavnagar.

Agriculture

1. Dash, Achyuta Nanda. *Physico-chemical behaviour and yield performance of rice : Effect of different irrigation schedules under varying levels of soil fertility and environmental conditions on physico-chemical behaviour and yield performance of rice, Yajati.* Sambalpur. Dr. P.K. Mohapatra, Reader, School of Life Sciences. Sambalpur University, Jyoti Vihar, Burla and Dr. S.C. Panda, O.U.A.T. Chipilima.

2. Dhingra, Ram Prakash. *Studies on root distribution and effect of nitrogen and zinc application on fruit set, fruit drop, yield and quality of lemon, Citrus limon Burm cv. Baramasi.* HAU.

3. Jogdande, Nilkanth Dnyanoba. *Investigations on the seasonal changes in growth hormones and their effects on vegetative and reproductive growth in mango varieties, Mangifere indica L.* MP Krishi. Dr. K.G. Choudhari.

4. Karle, Anand Shivajirao. *Effect of various levels of nitrogen, phosphorus and potassium on growth and yield of potato, Solanum tuberosum L.* Marathwada Agrl. Dr. J.T. Nankar, Agronomist and Officer Incharge, Cotton Research Scheme, Marathwada Agricultural University, Parbhani.

5. Khistaria, Malde Keshavbhai. *Studies on growth and yield of rabi sorghum, Sorghum bicolor (L) Moench to graded levels of nitrogen and jalshakti under rainfed and irrigated conditions.* Marathwada Agrl. Dr. V.B. Shelke, Prof., Department of Agronomy, Marathwada Agricultural University, Parbhani.

6. Rajendra Kumar. *Efficacy of different phosphorus carriers under varying soil crop conditions.* CS Azad. Dr. R.S. Singh, Assoc. Prof., Department of Soil Science and Agricultural Chemistry, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

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10. Srivastava, Ajit Prakash. *Effect of plant growth regulators and chemicals on sex expression, growth and yield of bottlegourd, Lagenaria siceraria Molina Standl.* CS Azad. Dr. G.S. Gour, Assoc. Prof, Department of Horticulture, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

11. Uttam, Shri Krishna. *Studies on fertilizer management moisture conservation and plant geometry in wheat, Triticum aestivum L. on eroded soils under rainfed conditions.* CS Azad, Dr. S.K. Das, Assoc. Prof., Department of Soil, Conservation, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur.

Zoology

1. Arfin, Misbahul. *Physiological and histochemical studies on some trematode parasites.* AMU. Dr. W.A. Nizami, Lecturer, Department of Zoology, Aligarh Muslim University, Aligarh.

2. Bhatt, Minakshi. *Systematic and cytogenetic studies of drosophilids of Kumaun region.* Kumaun. Dr. B.K. Singh.

3. Chakrapani B K. *Ecology and dynamics of plankton in a lentic habitat.* Bangalore. Dr. S. Ravichandra Reddy, Department of Zoology, Bangalore University, Bangalore.

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5. Dey, Auli *Carcinogenic and teratological evaluation of inhaled chloroform and chlorine constituents of methyl isocyanate (MIC) in female albino rats.* Barkatullah Dr S.P. Norton, Prof., Department of Zoology, MVM Bhopal and Dr. S.N. Sharma, Head, Department of Preventive and Social Medicine, Gandhi Medical College, Bhopal.

6. Dey, Debasis. *Some aspects of germ cell cytogenetics in S 180 tumour-bearing mice subjected to combination chemotherapy.* Burdwan. Dr. Samar Chakraborti, Reader, Department of Zoology, University of Burdwan, Burdwan.

7. Evangelin, Anita. *Studies on some aspects of physiology and histology of fish, Channa punctatus Bloch during methyl parathion intoxication.* Osmania.

8. Ghanathay, Vinod V. *In vivo effects of BHC on some aspects of physiology and histopathology of fish, Channa punctatus Bloch.* Osmania.

9. Gopal Rao, V.V.N. *Cytogenetic investigations in tuberculosis patients.* Bangalore. Dr. (Mrs.) I.M. Thomas, Department of Anatomy, St. John's Medical College, Bangalore.

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11. Gulhane, Rajlaxmi Madhukarrao. *Observations on reproduction in the female house rat, Rattus rattus rufescens (Gray).* AMU. Dr. J.H. Sabnis, Department of Zoology, Vidarbha Mahavidyalay, Amravati.

12. Hooroo, Rupa Nylla. *Analytical investigations on the neural inducing capacity of the primitive streak af the chick, Gallus domesticus embryo with and without endoderm.* NEHU. Late Dr. M.K. Khare and Dr. (Mrs.) P. Michael, Department of Zoology, North Eastern Hill University Shillong.

13. Joshi, Kripal Datt. *Studies on the reproductive cycle and the hypothalamo-hypophyseal system of the hill-stream teleost, Puntius dukai (Day).* Kumaun. Dr. P.C. Joshi.

14. Jyothi, J.V.A. *Ecological and physiological studies on greater wax moth, Galleria mellonella L.* Bangalore. Dr. C. Chandrasekhara Reddy, Lecturer, Department of Zoology, Bangalore University, Bangalore.

15. Khan, Riazur Rehman. *Studies on the toxicity of pesticides in rats fed on low cereal diet.* AMU. Prof. Mumtaz A. Khan, Department of Zoology, Aligarh Muslim University, Aligarh.

16. Kotangale, Jaideo Pralhad. *Population dynamics of zooplankton in sewage fertilized fish ponds.* Nagpur. Dr. K.P. Krishnamoorthi, National Environmental Engineering Research Institute, Nagpur.

17. Pant, Jaishree. *Biochemical, haematological and histopathological effects of pesticide intoxication in a common teleost, Puntius conchonius Ham.* Kumaun. Dr. T.S. Gill.

18. Prasann Kumar. *The short and long term effect of certain anti-inflammatory drugs on carbohydrate and lipid homeostasis in rabbit.* Rohilkhand. Dr. T.C. Jain, Hindu College, Moradabad.

19. Satya Prameshwar, K. *Effect of metallic pollutants, Copper and Chromium on metabolism of fresh water mussel, Lamellidens marginalis Lamarck.* Kakatiya. Prof. N. Chari, Department of Zoology, Kakatiya University, Warangal.

20. Saxena, Kamal Kumar. *Biochemical effects of some modern anthelmintics on Ascaridia galli and Heterakis gallinae,* Rohilkhand. Dr. K. Singh, Bareilly College, Bareilly.

21. Shafqat, Samina. *Study of soil nematode, Dorylaimus p.* AMU. Prof. M.S. Jairajpuri, Department of Zoology, Aligarh Muslim University, Aligarh.

22. Shah, Kum Kum. *Histochemical studies on the epidermis of certain hillstream fishes.* Kumaun. Dr. S.K. Agrawal.

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27. Tahseen, Qudsia. *Comparative developmental biology of some soil inhabiting nematodes.* AMU. Prof. M.S. Jairajpuri, Department of Zoology, Aligarh Muslim University, Aligarh.

28. Tiwari, Hema. *Studies on the experimental heavy metal poisoning in a fresh water fish, Puntius conchonius Ham.* Kumaun. Dr. T.S. Gill.

Medical Sciences

1. Datta, Krishna. *Immunobiological studies on the enteropathogenic factors of non-01-Vibrio cholerae isolated from clinical and environmental sources.* Calcutta.

2. Labhasetwar, Vinod Damodar. *Influence of pathophysiological conditions on electrokinetic potential of erythrocytes.* Nagpur. Prof. A.K. Dorle, Department of Pharmaceutical Sciences, Nagpur University, Nagpur.

3. Rama Murty, Ayanampudi Sri. *Bio pharmaceutical studies on solid dispersions of poorly soluble drugs in water soluble cellulose Polymers.* Andhra.

4. Shanbhogue, Ravindranath. *Behavioural neurobiology of inter-relationship between central neurotransmitters and benzodiazepine receptors in modulating anxiety states in rats.* Mangalore. Dr. P. Gundu Rao, Principal, College of Pharmaceutical Sciences, Kasturba Medical College, Manipal.

5. Tupkari, S.V. *Investigations on triphala and gold containing ayurvedic formulations.* Kakatiya. Dr. C.K. Kokate, Prof, Department of Pharmacy, University College of Pharmaceutical Sciences, Kakatiya University, Warangal.

6. Vijay Kumar. *Hepatic plasma membrane chemistry and function in relation to protein nutrition.* Delhi.

Animal Husbandry

1. Chattopadhyay, Syamal Kumar. *Pulmonary mycosis of sheep and goats-occurrence, aetiopathological and experimental studies.* Rohilkhand, Dr. N S. Pariha, Indian Veterinary Research Institute, Izatnagar.

2. Deshpande, Lalita. *Studies on ovarian responses and periovulatory endocrine profile in buffaloes under superovulatory regimes.* HAU.

3. Kapoor, Kailash Nath. *Studies of Escherichia coli of public health importance.* Rohilkhand. Dr. S B. Kulshras, Indian Veterinary Research Institute, Izatnagar,

4. Verma, Jagdish Chandra. *Studies on drug resistance in Salmonella organisms from animal sources.* Rohilkhand. Dr, B.R. Gupta, Indian Veterinary Research Institute, Izatnagar.

5. Verma, Ramesh Prasad. *Studies on deep freezing of buffalo semen.* Rohilkhand. Dr. B.R. Benjamin, Indian Veterinary Research Institute, Izatnagar.

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Note : In the case of post at Sr. No. 1 if a suitable qualified candidate belonging to SC is not available, then candidates from remaining categories of backward classes will be considered for appointment. Further in case a suitable qualified candidate belonging to the other reserved categories is not available, then a candidate from open category will be considered for appointment for one academic year only.

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REGISTRAR

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INDIAN INSTITUTE OF TECHNOLOGY, MADRAS-36

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1. For receipt of Requisition for Application by Post	12th April, 90 (Thurs.)
2. For receipt of Completed Applications	24th April, 90 (Tues.)
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Value : Expenditure on boarding and lodging, internal travel related to the studies etc will be met by the Hungarian Government.

Passage Cost : The cost of passage from India to Hungary and back will be borne by the candidate or his/her sponsorers/employers. Subject to availability of funds, the passage cost may also be met by the Government of India provided the candidate is eligible under the rules.

Note : (1) The following documents must be attached with the application : (a) Attested copy of the certificate certifying the date of birth. (b) Candidates belonging to SC/ST must attach a copy of certificate to this effect. (c) Attested copies of marks sheets of the qualifying examinations. (d) Attested copies of all degrees/diplomas/certificates etc. (e) A clear and precise programme of study/research proposed to be undertaken in Hungary. (f) A recent passport size photograph of candidate to be affixed on the prescribed application form. (2) Application in the subject-field other than those specified above will not be considered. (3) Candidates who have already been abroad for study/specialisation/training either on a scholarship or on their own are eligible to apply if they have been in India for atleast three consecutive years after their return from abroad. (4) Applications of candidates who are at present abroad, will not be considered. (5) Candidates should have sufficiently good knowledge of India and the Donor country. (6) Applications which do not contain any of the required documents will be treated incompleted and will not be considered. (7) No correspondence will be entertained with candidates not selected for interview/scholarship. (8) Canvassing in any form will be a disqualification. (9) Employed candidates must send their applications through their employers. The application will be treated as incomplete if the employer does not fully sponsor his/her candidature. (10) Applications received after the prescribed date will not be entertained. Candidates should apply for the above scholarships on plain paper (preferably typed) furnishing the requisite details/particulars to the **Deputy Educational Adviser, Ministry of Human Resource Development, Department of Education, External Scholarship Division, Section ES. 1, Room No. 516, B-Wing, Shastri Bhavan, New Delhi-110 001 latest by 30th March, 1990.** Application received thereafter will not be entertained for consideration. Format of application is attached.

APPLICATION FORM

Passport size photograph duly signed in ink to be pasted here (without photograph application will be considered incomplete).

1. Scheme under which applied———————
   Subject :——————Sub-subject :——————
2. Name in full as in passport Dr/Shri/Shrimati / Kumari (in capital letters).

   (Surname) (First name) (Second name)
3. Name of father :——————————
4. Name of the sponsoring authority and/or name of the authority which will employ you on return from abroad.
5. (a) Date of Birth———(b) Place of Birth :——
6. (a) Are you a citizen of India :——————
   (b) State to which you belong :——————
   (c) Are you a member of Scheduled Caste/ Scheduled Tribe. If so, give particulars and attach certificate from the District Magistrate of your place of residence in support of your claim.

FOR OFFICIAL USE ONLY A Q E

7. Address of the applicant with pin code number :
   (i) Present/Mailing : ——(ii) Permanent : ——
8. Particular concerning Examinations passed commencing with Matriculation or equivalent examination (attach attested photocopy of each certificate/diploma/degree for record)

University/ Board/ Institution	Examination passed with year	Class/ Division	Percentage of marks & position if any	Subject taken

9. (a) Details of papers published, if any :
   (b) What you have been doing since last examination mentioned under Col. 8.

10. (a) Particulars of employment :

Office/ Instt. Where employed	Date of joining	Date of leaving	Post held	Monthly salary	Nature of duties]

(b) Have you any contact obligation with your employer ? If so, furnish details.

11. (a) Knowledge of foreign languages, if any (attach proof if possible).

Skill		Very good	Good	Fair	Nil
Comprehension	Spoken				
	Written				
Expression	Speaking				
	Writing				

12. Nature of proposed programme of study/research :

(a) Field of study
Main subject : ———Sub-subject :————

(b) Scholarship/Fellowship desired for :
Training/Specialisation :
Doctoral study/research :
Post-doctoral study/research :

(c) Name of the Institution (if known) where admission/training is desired (in order of preference).

(d) Are you willing to accept a place at some other institution if the appropriate scholarship agency recommends it ?

(e) Have you already approached any University or University Professor in the country in which you intend to study ? If so, give name and results.

(f) Degree sought, if any.

(g) Give separately in extra sheets, brief statement in about 100 words each about.

(a) The work engaged in

(b) Nature, programme of study/research desired.

13. Future prospects after studies/research.

(a) Plan for the future

(b) How are these related to the technical or economic development of the country ?

14. (a) Have you applied for any other scholarship in the last two years ? If so, state the name(s) of the scholarship(s) and the subject of study/research proposed therein. Are you willing to be considered under any similar scholarship scheme involving study in another country ? If so, which ?

(b) If you had applied under this scheme previously please indicate the result.

15. Give below the names of two persons (they must not be related to you) who are in a position to testify from their personal knowledge as to your fitness for the proposed courses of study. They must be persons under whom you have worked or studied.

(i) Name with full address :

(ii) Name with full address :

16. Have you ever been abroad ? If so, give the following particulars :

Country visited	Date of visit	Duration of visit	Purpose of visit	Scholarship received if any

17. Father's name (in full)
(a) Nationality : (b) Occupation : (c) Address :

18. In case you are married, please state :

(a) The name of your Wife/Husband with full address :

(b) Nationality :

(c) Occupation (please give designation with full address if he/she is employed) :

19. Next of kin to be notified in the case of emergency (give name, address and relationship).

20. I hereby declare that the entries in this form and the additional particulars (if any) furnished in reply to the questions above are true to the best of my knowledge and belief.

(Signature of the Candidate)

Place :
Date :

21. I understand that if I fail to avail myself of this scholarship under any circumstances, the Government of India will not consider me for any scholarship being administered by them for a minimum period of atleast one year from the date by which this scholarship should have commenced.

(Signature of the Candidate)

Place :
Date :

22. (a) Certified that Shri/Smt./Km...is employed by us/me. He/She has been working here as ......since.....and has been sponsored by us/me for study abroad.

(b) He/She will be relieved by me/us, if selected.

(c) I/We undertake that he/she will be permitted to join his/her department/organisation on return from study abroad. I/We will ensure that his/her terms and conditions of service i.e. salary, seniority, promotion, leave etc. will not be adversely affected on account of his/her absence and further that everything possible will be done to provide the scholar with work and conditions of service suitable to and commensurate with his/her qualifications/training obtained abroad.

(Signature of Employer/Sponsoring Authority)

Place :
Date :

Seal of Office:

davp 89/1140

Ministry of Human Resource Development (Department of Education)

BULGARIAN GOVERNMENT SCHOLARSHIPS, 1990-91

Applications are on plain paper in the format are invited from Indian nationals for the award of 4 scholarships offered by the Government of People's Republic of Bulgaria for 1990-91 for Post-Graduate studies leading to Doctoral/Ph.D degree in the fields of Veterinary Medicine, Pharmacy, Electrical Engineering and Technology of Food Industry except Soyabean.

Educational Qualifications : Uniformly good academic record with 60% or above marks in Master's degree in the subject concerned or related field.

Essential Experience : At least two consecutive years teaching/research/practical experience as on 1-1-1990 in the subject field selected, after obtaining the prescribed qualifications. Successful completion of M. Phil. would be counted as experience of one year.

Age : Must be less than 33 years as on 1-1-1990 but relaxable upto two years for Scheduled Caste/Scheduled Tribe candidates.

Duration : Three years including the period of learning Bulgarian language.

Value : The scholarship carries the following allowances payable by the Government of Bulgaria :- (i) Monthly maintenance allowance of Levas 140/- (Leva 1=Rs. 9.21) and bachelor hostel accommodation at a monthly rental of about Leva 5/-; (ii) Free medical treatment; (iii) Internal transport connected with the study and (iv) Food against payment in canteen for university students.

Passage Cost : Travel expenses from India to Bulgaria and back will be borne by the candidates or his/her sponsors/employers. Subject to availability of funds, the passage cost may be met by the Government of India, provided the candidate is eligible under the rules.

Note : (1) The following documents must be attached with the application: (a) Attested copy of the certificate certifying the date of birth (b) Candidates belonging to SC/ST must attach a copy of certificate to this effect (c) Attested copies of marks sheet of qualifying examination (d) Attested copies of all degree/diplomas/certificates etc. (e) Candidates must furnish a clear and precise programme of study/research in Bulgaria (i) A recent passport size photograph of candidate to be affixed at appropriate place on the application. (2) Application in the subject-fields other than those specified above will not be considered. (3) Candidates who have already been abroad for study/specialisation/training either on scholarship or on their own are eligible to apply only if they have been in India for at least three consecutive years after their return from abroad. (4) Applications of candidates who are at present abroad, will not be considered. (5) Candidates having contacts with Bulgarian professors/placements at the Bulgarian Institutes will be given preference. (6) Candidates should have sufficiently good knowledge of India and Donor country. (7) Applications which do not contain any of the required documents will be treated incomplete and will not be considered. (8) No correspondence will be entertained with candidates not selected for interview/fellowship (9) Canvassing in any form will be disqualification. (10) Candidates must send their applications fully sponsored by their employers. Advance application duly completed in all respects may also be considered provided the application through employer is received within a fortnight from the last date prescribed for the receipt of completed applications pending sponsorship by employers and (11) Applications received late will not be entertained for consideration after the prescribed date.

Candidates should apply for the above scholarships on plain paper (preferably typed) furnishing the required details/particulars to the Deputy Educational Adviser, (ES) Ministry of Human Resource Development, Department of Education, External Scholarship Division, Section ES I, Room No 516 'B' Wing, Shastri Bhavan, New Delhi-110 001 latest by 30 March, 1990. Application received thereafter will not be entertained for consideration.

APPLICATION FORM

Passport size photograph duly signed in ink to be pasted here (without photograph application will be considered incomplete)

1. Scheme under which applied : ____________________
   Subject : . . . . Sub-subject : . . . .
2. Name in full as in passport Dr/Shri/Shrimati/Kumari (in capital letters).

____

(Surname) (First Name) (Second Name)

3. Name of father : ____________________
4. Name of the sponsoring authority and/or name of the authority which will employ you on return from abroad.
5. (a) Date of Birth :
   (b) Place of Birth :
6. (a) Are you a citizen of India :
   (b) State which you belong :
   (c) Are you a member of Scheduled Caste/Scheduled Tribe ? If so, give particulars and attach certificate from the District Magistrate of your place of residence in support of your claim.

For official use only : A Q E

7. Address of the applicant with Pin Code Numbers :
   - (i) Present/Mailing :
   - (ii) Permanent :

8. Particulars concerning Examinations passed commencing with Matriculation or equivalent examination (attach attested photocopy of each certificate/diploma/degree for record)

University/Board/ Institution	Examination passed with year	Class/Division	Percentage of marks & position, if any	Subject taken

9. (a) Details of papers published, if any :
   (b) What you have been doing since last examination mentioned under Col. 8

10. (a) Particulars of employment :

Office/Institution where employed	Date of Joining	Date of leaving	Post held	Monthly salary	Nature of Duties

   (b) Have you any contract obligation with your employer ? If so, furnish details.

11. Knowledge of foreign language, if any (attach proof if possible)

Skill		Very Good	Good	Fair	Nil
Comprehension	Spoken				
	Written				
Expression	Speaking				
	Writing				

12. Nature of proposed programme of study/research :
   - (a) Field of Study
     Main subject :
     Sub subject :
   - (b) Scholarship/Fellowship desired for :
     Training/Specialisation :
     Doctoral Study/Research :
     Post-Doctoral Study/Research :
   - (c) Name of the Institution (if known) where admission/training is desired (in order of preference).
   - (d) Are you willing to accept a place at some other institution if the appropriate scholarship agency recommends it ?
   - (e) Have you already approached any University or University Professor in the country in which you intend to study ? If so, give name and results.
   - (f) Degree sought, if any.
   - (g) Give separately in extra sheets, brief statement in about 100 words each about :
     - (a) The work engaged in
     - (b) Nature, programme of study/research desired.

13. Future prospects after studies/research,
   - (a) Plan for the future
   - (b) How are these related to the technical or economic development of the country ?

14. (a) Have you applied for any other scholarships in the last two years ? If so, state the name(s) of the scholarship(s) and the subject of study/research proposed therein. Are you willing to be considered under any similar scholarship scheme involving study in another country ? If so, which ?
   (b) If you had applied under this scheme previously please indicate the result.

15. Give below the names of two persons (they must not be related to you) who are in a position to testify from their personal knowledge as to your fitness for the proposed courses of study. They must be persons under whom you have worked or studied.
   - (i) Name with full address :
   - (ii) Name with full address :

16. Have you ever been abroad ? If so, give the following particulars :

Country Visited	Date of Visit	Duration of Visit	Purpose of Visit	Scholarship received, if any

17. Father's name (in full) :
   - (a) Nationality :
   - (b) Occupation :
   - (c) Address :

18. In case you are married, please state :
   - (a) The name of your Wife/Husband with full address :
   - (b) Nationality :
   - (c) Occupation (Please give designation with full address if he/she is employed)

19. Next of kin to be notified in the case of emergency (give name, address and relationship)

20. I hereby declare that the entries in this form and the additional particulars (if any) furnished in reply to the) questions above are true to the best of my knowledge and belief.

Place :
Date:

(Signature of the Candidate

21. I understand that if I fail to avail myself of this scholarship under any circumstances, the Government of India will not consider me for any scholarship being administered by them for a minimum period of atleast one year from the date by which this scholarship should have commenced.

Place :
Date :

(Signature of the Candidate)

22. (a) Certified that Shri/Smt./Km. . . . . . is employed by us/me. He/She has been working here as ____________ since ____________ and has been sponsored by us/me for study abroad.

(b) He/She will be relieved by me/us, if selected.

(c) I/We undertake that he/she will be permitted to join his/her department/organisation on return from study abroad. I/We will ensure that his/her terms and conditions of service i.e. salary, seniority, promotion, leave etc. will not be adversely affected on account of his/her absence and further that every thing possible will be done to provide the scholar with work and conditions of service suitable to and commensurate with his/her qualifications/training obtained abroad.

Place :
Date :

(Signature of Employer/Sponsoring Authority)
Seal of Office

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Government of India

Ministry of Human Resource Development

(Department of Education)

POLISH GOVERNMENT SCHOLARSHIPS FOR PRACTICAL TRAINING 1990

Applications on plain paper in the given format at are invited from Indian nationals for the award of one scholarship offered by the Government of Poland for short term specialisation in one of the following fields:

(i) FISHERIES
(ii) COAL MINING; and
(iii) SHIP BUILDING/NAVAL ARCHITECTURE

Value : Adequate maintenance allowance, free accommodation, tuition fees and free medical care when necessary, will be paid by the Polish authorities.

Duration : 5 months.

Qualifications : For (i) Uniformly good academic record, with 60% or above marks in Master's degree, in the subject concerned or in the related field. For (ii) and (iii) 60% or above marks in Bachelor's degree in Coal Mining/Mining Engineering and Naval Architecture respectively.

Essential Experience : At least two consecutive years teaching/research/practical experience at the college or University level as on 1-1-1990 in the subject field after obtaining the prescribed qualification. Successful completion of M.Phil/Pre-Ph.D. will be counted as one year's experience. Good knowledge of English is essential. Candidates who have done M. Tech/M. E. are however required to have one year's experience instead of two as on 1-1-90.

Age : Must be less than 33 years as on 1-1-1990 (Relaxation in age upto two years will be given in the case af Scheduled Caste/Scheduled Tribe candidates).

Passage Cost : Travel expenses from India to Poland and back will be borne by the candidates or his/her sponsors/employers. Subject to availability of funds, the passage cost may also be met by the Government of India, provided the candidate is eligible under the rules.

Note : (1) Conversion formula is to be given where grades have been awarded by Universities/Institutions (2) With the applications. Candidates must attach attested copies of (a) certificate showing the date of birth. (b) certificate duly signed by First Class Magistrate to one's being a Scheduled Caste/Scheduled Tribe/Backward Class candidates. (c) Marks Sheets and Certificates/Degrees of all qualifying examinations. (3) Candidate must also affix/attach (a) a recent passport size photograph at the appropriate place in the application, (b) a clear and precise programme of studies/research proposed to be undertaken in Poland. (4) Applications in the subject field other than those specified above will not be considered. (5) Candidates who have already been abroad for study/research/specialisation/training either on a scholarship or on their own may be eligible to apply only if they have been in India for at least three consecutive years after their return from abroad. (6) Applications of candidates who are at present abroad, will not be considered (7) Candidates having contacts with Professors/placement at the Institutes of the donor country will be given preference (8) Candidates should have sufficiently good knowledge of India and the Donor Country (9) Applications which do not contain any of the required documents will not be considered (10) No correspondence will be made with candidates not selected for interview/scholarship (11) Canvassing in any form will be a disqualification. (12) Candidates who are in employment must send their applications duly sponsored by their employers. An advance copy of such application duly completed in all respects will, however, be considered provided the application through employer is also received subsequently. (13) Applications received late will not be entertained.

Candidates should apply for the above scholarships on a plain paper (preferably typed) in the format given below and send the same to the **Deputy Educational Adviser (T). Ministry of Human Resource Development, Department of Education, External Scholarship Division, Section ESI, Room No. 516, "B" Wing, Shastri Bhawan, New Delhi-110 001 latest by 31-3-1990.**

APPLICATION FORM

Passport size photograph duly signed in ink to be pasted here (without photograph application will be considered incomplete)

1. Scheme under which applied : ____________________
   Subject. . . . . , ... Sub-sujbect..............
2. Name in full as in Passport Dr/Shri/Shrimati/Kumari (in capital letters)

(Surname) (First name) (Second name)

3. Name of father ____________________
4. Name of the sponsoring authority and/or name of the authority which will employ you on return from abroad.
5. (a) Date of Birth:
   (b) Place of Birth:
6. (a) Are you a citizen of India :
   (b) State to which you belong :
   (c) Are you a member of Scheduled Caste/Scheduled Tribe ? If so, give particulars and attach certificate from the District Magistrate of your place of residence in support of your claim.

For official use only : A Q E

7. Address of the applicant with pin code number :
   (i) Present/Mailing :
   (ii) Permanent :
8. Particulars concerning Examinations passed commencing with Matriculation or equivalent examination (attach attested photocopy of each certificate/degree for record)

University/Board/ Institution	Examination passed with year	Class/Division	Percentage of marks & position if any	Subject taken

9. (a) Details of papers published, if any :
   (b) What you have been doing since last examination mentioned under Col. 8
10. (a) Particulars of employment :

Office/Institution where employed	Date of Joining	Date of leaving	Post held	Mothly salary	Nature of duties

(b) Have you any contract obligation with your employer ? If so, furnish details.

11. Knowledge of foreign language, if any (attach proof if possible)

Skill		Very Good	Good	Fair	Nil
Comprehension	Spoken				
	Written				
Expression	Speaking				
	Writing				

12. Nature of proposed programme of study/research :
    (a) Field of Study
    Main subject :
    Sub subject :
    (b) Scholarship/Fellowship desired for :
    Training/Specialisation :
    Doctoral study/research:
    Post-Doctoral study/research:

(c) Name of the Institution (if-known) where admission/training is desired (in order of preference)
(d) Are you willing to accept a place at some other institution if the appropriate scholarship agency recommends it ?
(e) Have you already approached any University or University Professor in the country in which you intend to study ? If so, give name and results.
(f) Degree sought, if any.
(g) Give separately in extra sheets, brief statement in about 100 words each about:
  (a) The work engaged in
  (b) Nature, programme of study/research desired.

13. Future prospects after studies/research.
  (a) Plan for the future.
  (b) How are these related to the technical or economic development of the country?

14. (a) Have you applied for any other scholarships in the last two years ? If so, state the name(s) of the scholarship(s) and the subject of study/research proposed therein. Are you willing to be considered under any similar scholarship scheme involving study in another country? If so, which?
  (b) If you had applied under this scheme previously please indicate the result.

15. Give below the names of two persons (they must not be related to you) who are in a position to testify from their personal knowledge as to your fitness for the proposed courses of study. They must be persons under whom you have worked or studied.
  (i) Name with full address:
  (ii) Name with full address:

16. Have you ever been abroad? If so, give the following particulars:

Country Visited	Date of Visit	Duration of Visit	Purpose of Visit	Scholarship received, if any

17. Father's name (in full):
  (a) Nationality:
  (b) Occupation:
  (c) Address:

18. In case you are married, please state:
  (a) The name of your Wife/Husband with full address:
  (b) Nationality.
  (c) Occupation (Please give designation with full address if he/she is employed)

19. Next of kin to be notified in the case of emergency (give name, address and relationship)

20. I Hereby declare that the entries in this form and the additional particulars (if any) furnished in reply to the questions above are true to the best of my knowledge and belief.

Place: (Signature of the Candidate)
Date:

21. I understand that if I fail to avail myself of this scholarship under any circumstances, the Govt. of India will not consider me for any scholarship being administered by them for a minimum period of atleast one year from the date by which this scholarship should have commenced.

Place: (Signature of the Candidate)
Date:

22. (a) Certified that Shri/Smt/Km. . . . . .is employed by us/me. He/She has been working here as _______ since _______ and has been sponsored by us/me for study abroad.
  (b) He/She will be relieved by me/us, if selected.
  (c) I/We undertake that he/she will be permitted to join his/her department/organisation on return from study abroad. I/We will ensure that his/her terms and conditions of service i.e. salary, seniority, promotion, leave etc. will not be adversely affected on account of his/her absence and further that every thing possible will be done to provide the scholar with work and conditions of service suitable to and commensurate with his/her qualifications/training obtained abroad.

Place: (Signature of Employer/Sponsoring Authority)
Date, Seal of Office.

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HIMACHAL PRADESH UNIVERSITY
'RECRUITMENT BRANCH'

Advertisement No. 2/90

Applications are invited (on prescribed form) for the following posts so as to reach the Assistant Registrar, Recruitment Branch, H.P. University, Shimla-171005, alongwith a crossed Indian Postal Order of Rs. 20/- (Rs. 10/- for SC/ST) payable to the Finance Officer by April 19, 1990 :

I. Professor in Physics—1 (Spl. in Experimental Physics with a strong background of Electronics, Solid State Physics or Material Science) in the Pay Scale of Rs. 4500-7300.

II. Reader in Journalism & Mass Communication—1 in the Pay Scale of Rs. 3700-5700.

III. Lecturer in Physics—1, in the Pay Scale of Rs. 2200-4000.

IV. Lecturer in Public Admn—1 (For H.P.U. Evening College, Shimla) in the Pay Scale of Rs. 2200-4000.

V. Cartographer—1 (Geography Deptt) in the Pay Scale of Rs. 2200-4000.

VI. Director Correspondence Courses —1 (Leave Vacancy, likely to continue) in the Pay Scale of Rs. 4500-7300.

Candidates already in service should send their applications through proper channel. An advance copy, however, may be sent direct.

Candidates called for interview will have to come to the place of the interview at their own expenses and bring with them their original research papers, degrees, etc. for verification.

The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied formally.

The University also reserves the right to fill up or not to fill up the post/s or to call only selected candidates for interview. The number of posts likely to be filled may vary.

Other things being equal, preference will be given to the candidates belonging to the Scheduled Caste/Scheduled Tribe for appointment to the post of Lecturer.

Application form alongwith detailed qualifications can be obtained from the Assistant Registrar, Recruitment Branch, H.P. University, Shimla-171005, personally on payment of Rs. 5/- or by making a written request to him accompanied by self-addressed envelope of 23 x 10 cms. with postage stamps affixed worth Rs. 1.40 Paise and a Postal Order of Rs. 5/- drawn in favour of Finance Officer, HPU.

Note : (i) Applications received on plain paper, applications not in confirmity with the requirements as specified in the application form and application received after the last date will not be entertained and no correspondence will be entertained in this regard.

(ii) A person applying for more than one post should send a separate application for each post.

A.R. Chauhan
REGISTRAR

UNIVERSITY GRANTS COMMISSION

Applications are invited for the following posts in the office of the University Grants Commission, Bahadur Shah Zafar Marg, New Delhi.

(1) RESEARCH OFFICER : Two Posts

Pay: Rs. 3000-100-3500-125-4500.

Age : 35 years (Relaxable by 5 years for employees of the Central and State Govts., Universities and Autonomous Bodies and for SC/ST Candidates).

Educational Qualifications : (a) First or second class Master's Degree from a recognised University in Science/Computer Science/Humanities/Social Sciences. (b) Ph.D. or published research work of equivalent standard.

Experience : Four years experience of teaching/research in a University/college/other Institutions in a post in the scale of Rs. 2200-4000.

(2) JUNIOR RESEARCH OFFICER : Three Posts (One reserved for SC category.)

Pay : Rs. 2200-75-2800-EB-100-4000.

Age : 35 years (Relaxable by 5 years for employees of the Central and State Govts., Universities and Autonomous Bodies)

Educational Qualifications : (a) First or second class Master's Degree from a recognised University in Science/Computer Science/Humanities/Social Science. (b) Ph.D. or published research work of equivalent standard.

Experience : 2 years experience of teaching/research in a University college/other Institutions in a post in the scale of Rs. 1640-2900.

Desirable : Experience of Computer Application.

Duties : Work relating to development programme, etc. of Universities/College and such other duties as may be assigned from time to time.

These posts are permanent and retirement benefits in the shape of Pension-cum-Gratuity-cum-G.P. Fund available to the employees of the Commission. The employees are also entitled to the benefits of the Central Government Health Scheme and allotment of residential accommodation in the general pool of the Government of India in their turn. The employees are also eligible for the Life Insurance Corporation Group Insurance Scheme.

How to Apply : Applications on plain paper addressed to the Secretary, University Grants Commission, giving full particulars about age, academic qualifications, experience, present pay and scale of pay etc. alongwith the names of two persons to whom reference may be made by the Commission should reach the office of the University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002 **within Twenty Days** from the date of issues of this advertisement. Incomplete applications will not be considered.

Persons already in employment should send their application through their employers otherwise these will not be entertained.

Candidates, if called for interview, will be paid railway fare both ways from their present place of residence to New Delhi and back to the extend of second class railway fare or actual bus fare by the shortest route.

davp 89/1159

SHRI JAGANNATH SANSKRIT VISHVAVIDYALAYA

SHRI VIHAR, PURI

No. 2176/90, SJSV. PURI. Dated 2-3-90

Applications in the prescribed form are invited from the intending candidates for the following posts in the Teaching Department of Shri Jagannath Sanskrit Vishvavidyalaya, Puri.

Sl. No.	Name of the Teaching Department	Name of the Posts	No. of vacancy
1.	Sahitya	1. Professor	1
		2. Reader	1
		3, Lecturer	1
2.	Vyakarana	1. Professor	1
		2. Reader	2
		3. Lecturer	2 (One regular & one leave vacancy)
3.	Vedanta	1. Professor	1
		2. Reader	2
		3. Lecturer	1
4.	Sarvodarshan	1. Professor	1
		2. Reader	2
		3. Lecturer	1
5.	Dharmashastra	1. Professor	1
		2. Reader	2
		3. Lecturer	1
6.	Nyaya	1. Professor	1
		2. Reader	2
		3. Lecturer	2

II. The posts carrying the following scales of pay:

(i) Professor : Rs. 4500-150-5700-200-7300/.

(ii) Reader : Rs. 3700-125-4950-150-5700/-

(iii) Lecturer : Rs. 2200-75-2300-100-4000/-.

(With three advance increments for Ph.D./Vidyavaridhi/Vidyavachaspati and one increment for M. Phil/Visistacharya at the initial on first appointment).

III. Age Limit : Below 60 years.

IV. Qualification

(A) Professors

An eminent scholar in relevant discipline with Post Graduate Acharya or its equivalent degree with Vidyavaridhi/Ph.D. and or published work of high quality and actively engaged in research. Atleast ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar in relevant discipline with established reputation who has made significant contribution to knowledge.

(B) Readers

(a) Good academic record with Vidyavachaspati / Vidyavaridhi/Ph.D./D. Litt or equivalent published work. Evidence of being actively engaged in (i) Research or (ii) innovation in teaching methods or (iii) production of teaching materials.

(b) Atleast 5 year's experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding record of teaching/research.

For determining "good academic record" the following criteria shall be adopted.

Explanation

(i) A candidate holding Vidyavachaspati/Vidyavaridhi or equivalent degree should possess at least a second class Post Graduate Acharya/Master's degree in relevant discipline;

OR

(ii) A candidate without Vidyavaridhi / Vidyavachaspati or equivalent degree should possess a high second class Post Graduate Acharya/Master's degree in relevant discipline and second class in Shastri/Bachelor's degree; or

(iii) A candidate not possessing Vidyavachaspati/Vidyavaridhi or equivalent degree but possessing Second Class Post Graduate Acharya/Master's degree in relevant discipline should have obtained first class in Shastri/Bachelor's degree.

(C) Lecturers

(a) A Doctorate's degree or research work of an equally high standard in relevant discipline; and

(b) Good academic record with Master's / Post Graduate Acharya degree in relevant discipline with at least 55% marks or its equivalent grade from an Indian University or a foreign University.

Provided that if a candidate possessing a Doctorate Degree or equivalent, research work is not available or is not considered suitable a person possessing good academic record may be appointed.

Explanation

For determining "good academic record" the following criteria shall be adopted.

(i) A candidate holding Vidyavachaspati/Vidyavaridhi or equivalent degree should possess at least a second class Post Graduate Acharya/Master's degree in relevant discipline with atleast 55% marks or its equivalent grade; or

(ii) A candidate without Vidyavachaspati/Vidyavaridhi or equivalent degree should possess a high second class Post Graduate Acharya/Master degree in relevant discipline with 55% marks or equivalent grade and second class in Shastri / Bachelor's degree.

Note-I

In Posts of Lecturers in each department reservation will be made at the rate of 15% for candidates belonging to Scheduled Caste and 7.5% for Scheduled Tribe.

Note-II

Candidates with Acharya (New) degree from this Vishvavidyalaya or an equivalent degree from any other Sanskrit University or from Rastriya Sanskrit Sansthan or any other recognised institution will be considered equivalent as Post Graduate degree holders in the relevant discipline. M.A. degree from General Universities with at least 5 years of teaching experience at Post Graduate level in Acharya or equivalent traditional courses in relevant subjects or at least three years experience with a Vidyavaridhi / Vidyavachaspati / Ph.D./ D. Litt. in relevant discipline, will be considered equivalent as Post Graduate degree in relevant discipline.

Note-III

Experience will be counted only of College Teaching. Experience acquired as Post Graduate Teacher or classical teacher in High School shall not be counted.

Note-IV

Experience must be in the rank of a Lecturer and that too in the relevant discipline.

Note-V

The persons having proficiency in indological study shall be given preference for the following posts:

1. Lecturer in Vyakaran—1 (Leave vacancy)
2. Professor of Nyaya—1

Note-VI

The persons who have proficiency in Pali and Prakuta shall be given preference for the Post of Lecturer in Sahitya.

Applications (seven copies) in the prescribed form as given below accompanied by copies of Educational Certificates, testimonials, publication and a recent Pass Port Size Photograph duly attested by a Gazetted Officer and a Bank Draft of Rs. 20/- (Rupees twenty) only payable to the Comptroller of Finance, Shri Jagannath Sanskrit Vishvavidyalaya at State Bank of India, Main Branch, Puri so as to reach the Registrar, Shri Jagannath Sanskrit Vishvavidyalaya, Shri Vihar, Puri-2 by registered post on or before 16-4-90 superscribed thereon with the words "Application for Teaching Posts under Shri Jagannath Sanskrit Vishvavidyalaya".

APPLICATION FORM FOR TEACHING POSTS

Advertisement No. Date

1. Name of the Candidate :
2. Post applied for :
3. Date of birth :
   (as recorded in the H.S.C. or Madhyama certificate)
4, Permanent Address :
5. Whether S.C./S.T. :
   (Certificate from the Competent Authority to be attached)
6. Nationality :
7. Educational qualification
   (Examinations passed with date, institution, from Matriculation/Madhyama onwards; Class/Division, Grade/Distinction, Discipline; subjects and percentage of marks)

8(a) Research experience (be recorded in a separate page) :
(b) Teaching Experience (Graduate and P.G. Level teaching indicating both the subject on discipline taught and period of such experience from appropriate authority) :

9. Specialization :
10. Research publications (enclose copies) :
11. Bank Draft No.——Date——
12. Any other work :
13. Address for correspondence :
15. Full signature (with date) :

Those candidates who had applied for these posts in response to this office advertisement No. 7880 dt. 19.8.88 and No. 3038 dt. 12.4.89 need not apply again. These candidates, however, are required to furnish further information, if any, in plain paper (7 copies) regarding their qualifications, published work and teaching experience etc. alongwith the certificates as per the requirements mentioned in the proforma of the application form to the undersigned by registered post by the specified date.

The Vishvavidyalaya reserves the right to reject any or all applications without assigning any reason thereto.

S. Mishra
REGISTRAR

MALARIA RESEARCH CENTRE

(Indian Council of Medical Research)
KHIRNI BAGH, SADAR BAZAR,
SHAHJAHANPUR-242001

Dated : 22-2-90

Applications are invited for the following posts in the Research Project "Mission on Integrated Disease Vector Control of Malaria".

Sl. No.	Name of Posts	Qualifications	Age	Pay
1.	Health Educator	M.Sc. Zoology	Below 30 years	Rs. 2050/- per month, consolidated
2.	Medical Laboratory Technologist	B.Sc. (Med. Lab. Tech.) or B.Sc. (Biol) with diploma in Medical Laboratory Technology	Upto 25 years	Rs. 1950/- per month, consolidated

Age, Qualification and experience prescribed above are relaxable in deserving cases only.

Posts are purely temporary and only for the duration of the Project and are transferable anywhere in India. The posts are on consolidated pay and without any other allowances or benefits like CPF, Bonus, LTC, etc which would be revised by the Council periodically depending on the increase in the price-index. Forms/Applications duly completed should be sent in favour of the undersigned on or before 16-4-90.

Note : 1. Incomplete and late received application will not be considered under any circumstances.
2. Canvassing in any form will be treated as disqualification .

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ANNUAL CONVOCATION
ANNA UNIVERSITY
FEB 1990

rom L to R : Prof. V.C. Kulandaiswamy, Vice-Chancellor, Hon'ble Dr. P.C. Alexander, Governor of Tamil Nadu an Chancellor of the Anna University and Dr. Vasant Gowariker, Secretary, Department of Science and Technology, Government of India, who delivered the convocation address.

REHABILITATION COUNCIL

(4-Vishnu Digamber Marg, New Delhi-110 002)

ADMISSION NOTICE

Applications are invited from eligible candidates on prescribed form to undertake a Joint Entrance Examination for admission to First Year Professional Courses being conducted by Institutions in India as follows :

NAME OF INSTITUTION	NAME OF COURSE
National Institute of Rehabilitation Training and Research Olatpur, P.O. Bairoi Distt. Cuttack 754 010	B.Sc. in Physiotherapy (3-1/2 Years) B.Sc. in Occupational Therapy (3-1/2 Years) Diploma in Prosthetic & Orthotic Engineering (2 Years)
National Institute for the Orthopaedically Handicapped Bon-Hooghly B.T. Road Calcutta 700 090.	Diploma in Physiotherapy (3 Years) Diploma in Occupational Therapy (3 Years) Diploma in Prosthetic & Orthotic Engineering (2 Years)
Institute for the Physically Handicapped 4-Vishnu Digamber Marg New Delhi-110 002.	Diploma in Prosthetic & Orthotic Engineering (2 Years)
National Institute for the Mentally Handicapped Manovikas Nagar, Bowenpally Secunderabad-500 011	Bachelor's Degree Course in Mental Retardation (3 Years) (Affiliated to Osmania University, Hyderabad)

The Joint Entry Examination will be conducted at Ahmedabad, Allahabad, Bhubaneswar, Bombay, Calcutta, Dehradun, Delhi, Gauhati, Hyderabad & Madras on 24 June, 1990. The Examination date can however be changed at the discretion of Rehabilitation Council.

A candidate must have passed 12th class examination under 10+2 System or an equivalent examination with Physics, Chemistry, Biology & English securing 50% marks in PCB to join B.Sc/Diploma in Physiotherapy and Occupational Therapy Courses and with Physics, Chemistry, Mathematics and English securing 50% in PCM to join Diploma in Prosthetic & Orthotic Engineering Course (40% in case of Schedule Caste, Scheduled Tribe and Physically Handicapped Candidates in PCB or PCM as applicable).

15% Seats for SC, 7-1/2% for ST Candidates and one Seat for Physically Handicapped (PH) in each course are reserved in all the three Institutions with the condition that their disability should not hinder in training and subsequently in performance of their professional duties.

For Bachelor's Degree Course in Mental Retardation candidates should have passed 10+2 or an equivalent examination with any combination of elective subjects securing 50% aggregate marks (40% in case of SC/ST candidates). Out of 17 Seats, four will be for SC, one for ST and the remaining 12 seats will be for general category candidates.

Those candidates who will be appearing in 12th class Examination under 10+2 system or equivalent Examination in March/April 1990 and whose results are likely to be declared before 1st July, 1990 and hope to obtain required percentage of marks are also eligible to apply. A candidate should have attained or will attain the age of 17 (Seventeen) Years on 1st October, 1990.

The Prospectus alongwith prescribed application form (separately) for (i) Physiotherapy/Occupational Therapy (ii) Prosthetic and Orthotic Engineering; and (iii) Bachelor's Degree Course in Mental Retardation may be obtained personally from the office of Rehabilitation Council at New Delhi or National Institute of Orthopaedically Handicapped, Bon-Hooghly, B.T. Road, Calcutta or National Institute for Rehabilitation Training and Research, Olatpur, P.O. Bairoi, Distt Cuttack (Orissa) or National Institute for the Mentally Handicapped, Secunderabad on payment of Rs. 15/- through a D/D on any Nationalized Bank at Delhi/New Delhi or Indian Postal Order on Delhi/New Delhi Post Office drawn in favour of "Rehabilitation Council" at New Delhi. Candidates who want the Application Form by Post should send payment of Rs. 23/- through D/D or IPO as mentioned above alongwith a self-addressed unstamped envelope of size 12 x 28 cms to Secretary, Rehabilitation Council which will be sent by Registered Post.

Candidates should apply for either (i) B.Sc./Diploma in PT/OT or (ii) Diploma in Prosthetic & Orthotic Engineering or (iii) Bachelor's Degree Course in Mental Retardation as the JEE for all Courses will be common and will be held on same date and time. A stipend of Rs. 100/- P.M. for full period of the Course will be payable to selected candidates given admission in PT, OT & POE courses as well as a prescribed monthly allowance to students of B.M.R. Course based on their family income. Details are given in the Prospectus.

Limited Hostel accommodation to outstation candidates given admission will be provided as available with all the four Institutes.

The application forms duly completed alongwith necessary certificates as mentioned in Prospectus and Postal Order/DD for Rs. 40/- General Category/Candidates and Rs. 10/- for SC/ST/PH candidates as Examination Fee payable to "Rehabilitation Council" at New Delhi as per instructions given in the Prospectus should reach only SECRETARY, REHABILITATION COUNCIL, 4-VISHNU DIGAMBER MARG, NEW DELHI-110002 BY **April 30, 1990.**

Applications received LATE will not be considered.

UNIVERSITY
NEWS

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Editor :
SUTINDER SINGH

4 APR 1990
T. R. I. MYSORE

Autonomous College—State Relationship

Om Prakash*

The National Education Policy (NEP), 1986 candidly confesses that our experience with the existing system of affiliation of colleges to universities has been "mixed", so that the experiment of autonomous colleges needs be tried out "in a big way". Although the target of five hundred autonomous colleges in the country could not be achieved by 1990 on account of initial hesitations and delays in amending university acts and statutes, the idea has already been accepted by all but a couple of states. It is time to examine whether this acceptance springs from a passive obedience to the NEP or from a real understanding of the problem. The manner in which the scheme has been put into practice, particularly in case of government colleges, is not very convincing. Any well-conceived scheme would go awry on account of flaws in the initial steps of its implementation. An attempt is made hereunder to suggest a rethinking about the government-autonomous college relationship so that this bold experiment in the field of higher education could be a success.

The concept of autonomy, coupled with accountability, is much different from the superior-subordinate or the controller-controlled mode of bureaucratic thinking. The state departments of education are but parts of monolithic state secretariats and the directorates of education are cast in the old mould that vests all powers of decision-making in the 'higher' 'controlling' authority. The hallmark of a 'good' subordinate is its unquestioning obedience, not only to orders and instructions but also to unfettered 'desires' expressed and discriminations made in the name of 'discretionary powers' vesting with the 'superior' authority'. On the other hand, the system of autonomy and accountability envisages that those competent to do so would only lay down norms and guidelines on basic policy matters, leaving each institution to work out the details in its own council and committees. Rather than seeing any insubordination in colleges managing their own affairs, the state governments should come forward to dispense with the practice of issuing sanctions and prior approvals in petty matters.

Since the experiment of autonomous colleges has been recommended as a new kind of relationship between the colleges and the affiliating university, some in the departments of education seem to presume that their own relationship with such colleges would remain unaltered. But the truth is that mere academic autonomy, not accompanied by a large measure of administrative and financial autonomy, is a myth. The autonomous colleges are no longer confined to missionary institutions already having an identity of their own, but also include aided private colleges and government colleges. Unless a new insight is soon developed, government interference in the affairs of aided autonomous colleges would prove stifling, what to talk of the fate of government autonomous colleges.

To take a concrete example, the UGC's Revised Guidelines require that before an autonomous college would qualify for additional financial assistance, it must constitute statutory Governing Council, Academic Committee and Boards of Studies, besides some other non-

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**Principal, Government College, Kishangarh, Rajasthan.*

statutory committees. Hence the state governments pioneering in the field of autonomous government colleges proceeded with constituting duly registered societies to run the colleges and with setting up their bodies as suggested. But atleast in one State, the governing councils so set up have not held their inaugural meetings in two years' time. In another State, governing councils met irregularly at the convenience of the department of education, but have not been able to take any major decisions. Their existence has more often been ignored than honoured in vital matters, like appointment and transfer of the principal and of other staff, introduction of new courses and subjects, and so no.

The autonomous colleges have the fundamental freedoms of deciding whom to teach, what to teach, how to teach and how to evaluate the taught. The first of these four implies that the autonomous colleges should be free to fix the number of seats in each class/course on considerations of academic relevance and facilities available and to lay down rules and procedure of fair admissions thereto, subject only to the reservation policy of the state. The cut-off percentage may be different at different colleges. One college may not admit failures and dropouts in favour of more deserving fresh candidates, while another college may have ample room for them all. In case of a less popular subject, one college may fill seats by lowering the eligibility whereas another may leave some seats unfilled rather than compromising on quality, while still another may devise a bridge course to attract students of other faculties. The state directorates of education should learn to leave such matters to be decided by the autonomous colleges, instead of compelling them to follow the common rules prescribed for non-autonomous colleges in the name of uniformity.

It also needs to be understood that the freedom of an autonomous college to decide 'what to teach' is not confined to annual routine revision of the syllabi. The college should be free to decide the courses and subjects it would teach in response to local needs and on the basis of infrastructure available. Before it is able to fulfil conditions of permanent affiliation for a subject in degree course, the college should not be compelled to start postgraduate classes in the same on non-academic considerations. Similarly, subjects need not be introduced if they are not likely to attract a certain minimum intake of reasonable academic standard merely on populist considerations.

The personnel policy could be the single most important area of State encouragement to autonomous colleges. Here, the difference between government and non-government autonomous colleges also comes out in bold relief, but first let us consider their common problems. A large number of jobs traditionally performed in the university office get transferred to the autonomous colleges, such as framing and publishing rules, ordinances, syllabi, etc., determining eligibility and maintaining enrolment records, arranging external question papers and evaluation of answer scripts, compilation and declaration of results, issuing marksheets, provisional certificates, and so on. The universities have an unenviable practice of making extra and overtime payments for quite a few of such jobs. In case of autonomous colleges, much work of this kind has to be performed by their faculty, but additional staff of various categories is still needed for some specialised jobs. The state directorates of education can be helpful in solving this personnel problem in ways more than one. In the first place, they could sponsor a work study of round-the-year functioning of an autonomous college, and utilise its conclusions to lay down norms for sanctioning additional posts on the one hand, and on the other hand, to list the jobs the existing staff, teaching as well non-teaching, would be required to perform on or without payment of honorarium. The management and the staff of non-government colleges should be given a clear picture of additional assistance they would receive from the grant-in-aid authority if they choose to accept the challenge of autonomous status. In case of government colleges, the staff is transferable. This circumstance should be put to good use by first defining additional work that autonomy involves and then inviting options from the entire state cadres of teachers and non-teaching staff. Screening and selections could then be made out of those willing to accept the challenge of greater discipline and hard work. Once this is done, the personnel management should be left to the governing council of the college, the state relinquishing its powers of making transfers and postings at the instance of 'desires' of politicians. This is necessary if any responsibility for a long term planning is to be cast on the faculty, and if those suggesting innovations are to be given a chance to work out their ideas. This has been stressed in the UGC Guidelines also, but has largely gone unnoticed and unheeded by state governments.

It has been rightly laid down in the UGC Guidelines that the service conditions of staff would not change on their college becoming autonomous, also

(*Continued on page 15*)

Orientation for Quality in Higher Education

Yoginder Verma*

It is largely accepted that the ailing higher education system in India is at the verge of collapse. A few peripheral spots mistakenly understood as symptoms of healthy system are nothing but signals of dwindling base. The deterioration is picking up without any indication of 'stop a while'. Among many other questions pertaining to higher education, one often asks who is responsible for this fuss?

Unfortunately, we Indians are clever enough to point out faults with others and the system. This is more true in case of teachers in higher education. They, being more read and exposed to various dimensions of knowledge, are apt in tranferring the blames of low quality teaching to other sub-systems. They are comparatively more vocal and have better access to media. But an objective analysis suggests that they are themselves responsible for the whole tumult.

Historically speaking, the legacy of Britishers deferred India's aspirations for suitable education system. A serious thinking to evolve Indian model of higher education started only after independence. But the reforms so carried out were superfluous and further flared up the deterioration.

Indian higher education system both in terms of quantity and quality is in pitiable situation. There remains overcrowding in the premises of colleges and universities despite the mushroom growth of private colleges. Poor functioning and exploitation in these institutions has further deepened the crisis. Over and above these all, the poor quality of teaching and guiding has further thwarted the standard of higher education.

It is true that 'men' make 'men'. But it is only quality men who produce 'men' in real sense. The quality is not only determined by the ability but also the level of motivation. Unfortunately teachers are less motivated and low inspired. They are ill-informed and less educated about their role. Most of them perceive their duties to be confined to forty minutes lecturing and dictating notes and guess-questions to their students. Instead of resisting the pressures of societal groups and veering to constructive consequences, they seem to flow in vogue.

Whatever be the causes of their indifference, we agree to the findings of various commissions and committees on higher education that a serious concern is needed to improve the quality of teachers and teaching. About forty years back, Radhakrishnan Commission recommended enhanced status to college/university teacher through respectable pay scales. Kothari Commission, in a more elaborate and comprehensive manner crystallised the problem of decline in the quality of teaching. This commission recommended strict criteria for recruitment and thereafter continuous development of teachers. But it was only in the document of National Policy on Education (1986) and its Programme of Action that a specific reference was made to the crucial link between the motivation of teacher and the quality of higher education.

The intention is not to attempt an attack on the teacher's status or quality but to build an argument that the improvement in higher education must start from teacher himself as he is the seed, fertiliser, nurturer and protector of systems' spirit.

Will the change in teacher's attitude come automatically? Perhaps not. We have to provide an environment and develop a culture where he feels inspired to shoulder the onus of coping up with the currents of change and exhibits desired behaviours. But this is not so simple. One may ask an inconvenient question what will cause desired ripples? One may respond that it is building up of appropriate skills, abilities and attitudes among teachers which will make a difference. As far as abilities are concerned, a new entrant in college/university has enough of them. He is selected on the basis of academic merit. Most of the times he possesses Ph.D./M.Phil degrees and passes competitive tests for entrance into the teaching profession. He may have appropriate abilities but lacks teaching skills and desired attitudes. Strangely, the entrants to teaching profession in the institutions of higher learning are never exposed to educational pedagogy, teaching aids, professional ethics and the importance of education in Indian context.

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* *Reader in the Academic Staff College, Himachal Pradesh University, Simla-5.*

In the absence of any systematic training for entrance into teaching profession at college or university level, most of the times, newly appointed teachers emulate old guards. Consequently, their performance is determined by chance rather than systematic learning of teaching skills. A particular style, howsoever effective might be at a specific time may become outdated at the other. This may leave a teacher in a state of confusion. Here we must remember that teaching profession is considerably different from other professions, particularly on account of its ethical and social responsibility/concern dimension. Teacher is not only a person who imparts education in a particular discipline but is also a guide and a leader who influences the behaviour and achievements of present and future generations. He is the dreamer and embodiment of national character.

In order to instil teaching skills and produce desired attitudes, the University Grants Commission has introduced four-weeks long Orientation Scheme for the new entrants in the college/university teaching under the umbrella of new institutions, Academic Staff Colleges in 1987. To begin with, the University Grants Commission identified 48 universities for the setting-up of Academic Staff Colleges with the objectives of organising Orientation Courses for the newly appointed lecturers, refresher courses for senior lecturers and training programmes for educational decision makers. In the first instance, the Academic Staff Colleges are implementing Orientation Programmes and Refresher Courses. Under the Orientation Scheme, they seek to develop awareness and understanding about socio-cultural patterns, foster desired attitudes and skills, motivate for self reliance, upgrade knowledge and widen understanding about the management of institutions of higher learning among the lecturers of colleges and universities.

Each Academic Staff College is free to design suitable curriculum for orientation within the tentative components laid down by the University Grants Commission. The main components are awareness of linkages between society, environment, development and education; philosophy of education, Indian educational system and pedagogy; subject upgradation; and management and personality development. The management of Academic Staff Colleges has been given freedom to select an appropriate methodology for the conduct of orientation. The basic philosophy of orientation revolves round the principle of learning through both formal and informal interactions and participation. During the period of programme, the participants belonging to different disciplines and institutions are expected to be housed in the same building so as they often interact and learn from each other's behaviour. Attempts are being made to develop an inbuilt mechanism for monitoring and evaluation of such programmes. In order to guide the selection of topics and resource persons, each Academic Staff College will have its own Academic Advisory Committee.

Academic Staff Colleges have already started functioning. A few are doing better while others are still crawling amidst the teething troubles of beginners. The effectiveness, of course, remains to be evaluated. Undoubtedly, orientation scheme, the remedy for improving the standard of higher education is well-imagined and designed but its performance will depend on numerous considerations. We can preconceive the following fears which may shatter the results of orientation scheme:

1. Less motivated, incapable and rigid persons may ultimately man the Academic Staff Colleges. This will deprive these institutions of the essentials of excellence in management such as leadership with vision, management with effectiveness and organisation with innovation.
2. The programmes may suffer the dominance of some disciplines such as education, management, political science, etc., defeating the basic objective of developing alround personality.
3. The orientation scheme is very different from B.Ed. or M.Ed. course in its philosophy and objectives. But a slight deviation from its objectives and functions may make this scheme a duplication of B.Ed. course and that way it may not operate as per its basic philosophy.
4. As the Academic Staff Colleges will be housed in the universities, their basic character may be adversely affected by the evils of university system.
5. The personnel manning these institutions may become stereotypes and obsolete in their approach in the absence of exposure to changing needs for training and development.
6. Academic Staff Colleges may not have adequate and impressive infrastructure. The

infrastructure of such colleges should be on parity with all the successful training and development institutions in the country. They should have latest equipment and teaching and training aids.

7. The curriculum may become routine and inflexible. As the society's needs are always changing, the curriculum should be continuously revised, modified and enriched.

8. Politicking in such institutions may erode their autonomy and harm efficiency. The politics may be prompted by tussle in college and university management, selection of resource persons, management of Academic Staff Colleges and the university, etc.

9. Due to bureaucratisation of Academic Staff Colleges, the efficiency and effectiveness may decline. Their performance will depend upon the dynamism of management and the adoption of principles of professional management.

10. A negative concern and indifferent attitudes of decision makers and the educational administrators may drag down the relevance of orientation and its application.

11. A decline in teacher's interest and curiosity in orientation may make this programme ineffective.

12. The orientation methods may take the form of traditional lecturing and silent listening. For real success it is essential that orientation employs a basket of methods both formal and informal.

The universities which have set up Academic Staff Colleges should clearly understand the philosophy of these institutions and precisely plan their growth. They must be nurtured, controlled and evaluated on set criteria. The effectiveness will depend upon the continuous watch over the above mentioned fears and stepping up of right measures. ☐

THE INSTITUTE FOR THE PHYSICALLY HANDICAPPED

4, VISHNU DIGAMBER MARG, NEW DELHI-110002

(Ministry of Welfare, Govt. of India)

Applications are invited on prescribed forms for admission to following courses starting from August, 1990, on the basis of entrance examinations to be held in June, 1990.

B.Sc. (Hons.) Physical Therapy
and
B.Sc. (Hons.) Occupational Therapy
(Under University of Delhi)
3-1/2 yrs. duration each.

Eligibility for Admission : S.S.C. Examination or equivalent (10+2) with 50% or more marks in the aggregate of four subjects (Physics, Chemistry, Biology and English) provided the students has passed in each subject separately). The candidates appearing/appeared in the examination may also apply.

Age as on 1-10-1990 : 17 years or more.

Cost of Prospectus : Rs. 10/- payable only by crossed Indian Postal Order in the favour of Director, IPH payable at Delhi.

Last Date for issue of Prospectus : 9-4-1990 (by post)
12-4-1990 (at the counter) of IPH, Delhi.

Last Date for receipt of applications : 20-4-1990

DIRECTOR

Loan Financing of Higher Education in India
—Pros and Contras

V.G. Kalyankar*

A system of making loans available to students is now being advocated as an innovative and promising policy to bring more fairness and equity in the provision of higher education, and to reduce the draft on the scarce resources of the Government. Student Loan Schemes of one type or the other, are now practised in a number of countries.[1]

Proponents of the system hold the view that students ought to be helped at the time they enter college, and should be encouraged to make independent decisions about their higher education. Thus the actual users of higher education i.e. those who benefit directly from it should bear the expenditure and should repay the funds advanced for their higher education through subsequent earnings or through taxes.

Student loans are usually provided under government auspices. The need for loan financing arises under circumstances wherein the low income students find it difficult to meet the costs of their education. It is argued that since everybody cannot pay the fees, loan facilities may be extended to all such people who want to pursue higher education. The amount borrowed by the student will be paid back when he becomes an earning member of the society. It is assumed that the earning capacity of everybody is increased by higher education, and one should be in a position to repay loans in instalments. The loan scheme can be made 'non-neutral' by subsidizing the loans through below the market interest rates. If the size of the loan repayment is not determined by a uniform (subsidized) interest rate, but is related to students' actual income, the borrowers' repayments will represent a fixed percentage of their income during a certain period of time.[2] A fixed proportion of the students' future income will be adjusted for repayment, and those who earn more can also be asked to pay back more. The loan amount which will be paid back after commencing employment can be recycled for granting further loans. Thus, within a few years, the entire scheme becomes self-financing, and alleviating the burden of subsidies (grants) on the government.

Student Loan Schemes can be introduced either without any rise in fees i.e. more public financing and lower private contributions or less public financing and consequently higher contributions from the public. The former method has been adopted in some Scandinavian and Latin American countries, but the outcome has been to raise substantially the share of the tax payers in financing higher education. Friedman has pleaded for providing loans for all along with charging full cost fees.[3]

The impact of an increase in fees will be offset by a comprehensive and generous scheme of loans so that the low-income students can participate.

While discussing higher educational financing in the context of the U.K. and reviewing the various possibilities, Prest (1966) opts for a loan system whereby sums of money are made available from public funds to all potential university students with the necessary minimum academic standard on the condition that they enter into a contract to repay a specified proportion of their life-time earnings to the government.[4]

In this scheme, students will be permitted to borrow fairly liberally, and the repayment will be made later, not on the basis of fixed interest plus amortization, but in the form of a specified proportion of higher life time earnings made possible by higher education. Students who do not achieve higher earnings need not make any repayments. The actual values to be used will be on an average basis and could be revised in the light of changing circumstances and experience. The advantages of this system are :

(i) It makes funds available to all those who need them upto a given maximum;

(ii) the essential unit in the transaction is the student himself rather than his family;

(iii) the proposition that repayments should be geared to future incomes rather than a fixed sum (as in the case of loans) places the onus of repayment on those who benefit from their expenditure and ensures that repayments do not cause undue hardship;

(iv) in the repayment principle, the subsidy ele-

**Research Associate, Economics of Education Unit, Department of Economics, University of Bombay, Bombay.*

ment can also be incorporated, if necessary, in recognition of the fact that the community benefits as well from an individual's training;

(v) in so far as it is desired, on national policy grounds to give greater encouragement to the study of some specific subjects rather than others, differential subsidies could be extended; and

(vi) if a student wishes to borrow less than the maximum amount, he can contract out of the system to that extent.

The major difficulty in this scheme would be to fix the size and range of initial grant. The calculation of the subsidy element in repayment (if this provision is included in the scheme) might raise many problems. As repayments will be linked to an individual's income tax payments, a fixed proportion of income being paid each year to amortize the original advance, the question of the measure of the income (should it be gross or net of allowances for dependents) arises, and this might raise many conflicting issues of incentives, equity and benefit[5]. If the rich decide to stay out of the system, the scheme may not turn into a powerful distributive agent. Further, students with high income expectations would be reluctant to commit themselves for what would amount to a substantial portion of their income; at the same time, there would tend to be more requests from poor students who feel that their future income prospects are below average (and hence would have little or no repayments to make). Forecasting of future income for each individual student, and arriving at an agreed formula, is a difficult process.

Besides, because of poorer backgrounds, students belonging to low income groups may record poor performances and have lower income potentials; even if they are given equal opportunities, because of the initial handicaps, the more the poor student would have to repay if he succeeds in overcoming these handicaps. The mode of repayment based on future incomes is weak if we have re-distribution cum equality of opportunity in view.

The Robbins Committee, after studying all the arguments for and against the loan scheme, decided not to recommend its introduction immediately; however, they envisaged that there might be a case for it in the future. Since then, there has been a great deal of discussion in the U.K. about this issue.

The following are the arguments raised in favour of the loan financing :

1. Loans will secure a fairer distribution of burdens of educational costs. It is more equitable because the general tax payer need not pay for the cost of education of the students of the relatively richer section of the society who can anyway afford to meet the full costs of education.
2. It will contribute to altering the distribution of educational opportunities and the supply of educated manpower; it can be used in a selective manner to make certain courses cheaper than others if they are useful to the society.
3. It will separate the serious from the casual students and will also make the students aware of the debt they owe to the society for providing higher education to them.
4. The freedom of choice of the students will be more in such matters as changing the course mid-way (unlike with the scholarship rules which are fairly rigid on this score) since the rules can be fairly flexible in this regard.
5. Under this scheme, there would be a better incentive to work whilst undergoing instruction.
6. It helps to develop a more acute cost-consciousness among students.
7. It enables higher educational institutions to improve their finances and provide higher quality instruction. They can raise the fee rates and retain their independence by depending less on Government grants[6]. Within a few years, the entire scheme becomes self-financing.

The following are the arguments raised against the scheme :

1. It does not scale subsidies inversely to income but merely provides low-income students with an ability to invest in higher education. Besides, the full privatization of education implied in the proposal would lead to a differentiation of the quality of higher education purchased by the community and would lead to future inequalities in the life-income streams[7].
2. It would discriminate between students who would take advantage of this facility and those who would not.
3.] The connection between higher education and

individual earning power would be overstressed in the system.

4. It is likely to be a deterrent to a student from a poor family. The prospect of debt repayment after graduation might diminish entry to higher education by low income students.[8]

5. Funds on a scale large enough to students for obtaining sufficient financial support may not be provided. Less liberal financial provision to students would favour a small elite rather than act as an incentive.

6. Further the distribution of the burden is attacked on such grounds as the weak link between education and earnings, the effects of the loan scheme in inflating salaries of graduates and the fact that with a progressive direct tax system, the tax-rate on high income graduates is higher than it would otherwise have been, etc. In so far as a man's earning span is shortened as a result of higher education, his life time earnings are more concentrated and given the usual pattern of progressive taxation, the present value of his life time tax payments will be larger than those of a man with the same present value of life-time earnings but spread over a longer period. The beneficiaries may also shift the burden of repayment on to their employers and ultimately to the consumers of their services.

7. Students would favour more lucrative courses and opt out of the less lucrative ones

8. The new class of long term debtors (students) may not repay the loans. They may have a vested interest in continuing inflation so that it will enable them to shrug off their responsibility.

9. There is the problem of girls who take advantage of this facility and later marry. Their loan commitments then would constitute a form of negative 'dowry'. Should the obligation to repay be cancelled on marriage or not (i.e. marriage would make no difference to the obligation)? Either of these is inequitable. The first will be unfair to unmarried women graduates; the second can be satisfied only if women continue to work after marriage. Anyway it would lead to all sorts of abuses and tax evasion.

10. It will be difficult to collect repayments from those leaving the country. The possibility of emigration will make the loan scheme administratively unworkable and the debt burden may even stimulate brain drain.

11. It would weaken family ties, since the parents' obligation is no more there and is replaced by students' contribution out of their future earnings. In developing countries, especially, the immediate effect of a loan scheme will be to decrease the redistribution of income that usually goes on within (joint) families.

12. Though the scheme might enable entry of private capital into the field there will be necessity of some form of government guarantee or insurance scheme.

13. There might be many administrative complications in the implementation of the loan scheme.

14. Finally, the scheme ignores the most important fact that the community also benefits from higher education. It is argued that the costs of financing higher education is not as high as they might appear, once the beneficial effects on economic growth are taken into account.

Various solutions have been given by Harris and Vickrey to cope with the problems created by a scheme of this type. After discussing the pros and cons of the loan system, Harris supports the need for loans, if not to cover the entire cost of higher education, at least to cover that part which will be reflected in private returns. This will enable subsidization to be restricted to that part of education which provides social benefits. According to him, there is no alternative to loans, if not to supplant, atleast to supplement other forms of finance.

While considering the feasibility of launching the loan scheme in developing countries, all the pros and cons of the scheme detailed above must be studied thoroughly. One major argument which would go in favour of the scheme in developing countries is the fact that in the almost fully subsidized system as existing at present in these countries (i.e. community financing of all students), the upper income groups are the real beneficiaries, and on equity grounds, one would not like a continuation of this. The annual growth rate of total expenditure on higher education has been rising in these countries due to the expansion in enrolment and the increasing cost of higher education with the fee income remaining fixed. While advocating his scheme for developed countries, Prest, however, doubts its practicability in developing countries on the following grounds :

(i) the equity argument for grants as redistributing income is weaker in these countries because there are far fewer university students in these countries;

(ii) the administrative machinery for tax collection is not well-developed in these countries to be able to cope with this extra complication in the tax structure; hence coordination of repayment with income tax assessment will create more problems; and

(iii) many university students in these countries study abroad, and the liability of repayment would discourage them to return home after completion of their studies.

Loan assistance programmes for all may not be administratively practical in countries like India. The financial constraints of the Government have also to be taken into consideration. Such a scheme cannot keep pace with the unrestricted expansion of higher education experienced in this country. With over 4 million student population at the university stage, more than 150 universities and over 5600 colleges of all types, it will be difficult to operate such a scheme successfully in India. However, a judicious combination of loans and grants can be evolved. In fact, India's Planning Commission had advocated the need for such a 'mix' of out-right grants and loans ('scholarship-mix'). Even this will have only limited operational validity in view of the bleak employment opportunities for trained personnel and the Government's financial constraints. Till the economic position improves and job opportunities for students become bright, the loan-scholarship programme will have to be confined to those disciplines where the chances of immediate employment, including self-employment are comparatively high. Here the scheme may be utilized as a tool to divert the trained man-power to those areas/sectors where acute shortage of trained personnel has been experienced.

There is a scheme at present in India called "The National Loan Scholarship Scheme". Under this scheme, students who have secured 50% or more marks and whose guardians' annual income is Rs. 6,000.00 or less, are held eligible for loan scholarship. They get a fixed amount according to the class in which they are studying. It is tenable for the full course. Income affidavit from the parents, a joint bond signed by the student and the guardian is required. The scholarship is free of interest and the amount of the loan is to be repaid by the awardee only after he starts earning. The National Loan Scholarship is still under trial. How many students will repay the loan is yet to be assessed.

Graduate Tax[9]

A Graduate Tax is an additional tax on graduates' future incomes which would reduce the net public outlays on higher education. It assumes that externalities do not justify the present level of public aid to higher education. With a graduate tax, Blaug states, there is no burden of personal debt to be repaid, and it would encourage working class students to continue education. All undergraduates receiving a full grant will become liable to the new tax on graduation. He believes that equality of educational opportunity would be better served by this arrangement than under the existing system. (U.K.) As this graduate tax will fall on the gross income, "..... the rich father who opted out on behalf of his son would saddle his son with higher income taxes than will be paid by a poor student who accepted the maintenance grant". Another argument raised in support of this kind of a tax is that it would facilitate an increase in university fees even to cover most of the cost of teaching additional students. If the grant is paid to students instead of the institutions, the entire system of higher education becomes flexible and responsive to the demands from students and parents; the students' freedom of choice between alternative courses increases; and the universities will have an incentive to expand and diversify their courses, according to different tastes and interests. Fees might vary between universities and so also entry standards; universities would not hide these differences but would publicize them in an effort to compete for students. The funds that the graduate tax releases can be more effectively put elsewhere within the educational system. Ways are also suggested for meeting the administrative problems involved in taxing graduates working abroad—through withdrawal of passports, bilateral agreements between countries, etc.

For the less-developed countries, Blaug suggests :

(i) cost-covering fees,

(ii) a modest scholarship programme for the most poor from the backward areas; and

(iii) student loans for everyone, to be financed out of the graduates tax[10].

The magnitude of the loan and the corresponding graduate tax could be varied from time to time to produce whatever scale of higher education that might be thought desirable. Such a scheme as this would be a great incentive to study and would encourage poor students and more women to seek higher education. "It could be defended politically on grounds of the benefit-principle of taxation-graduates earn more and there is no reason why the average taxpayer who earns less should be asked to subsidize higher education for the privileged few—and on grounds of equity—it is the only system which gives everyone equal access to funds and then taxes them alike. It would be even more acceptable on egalitarian grounds if the graduate tax were made progressive; and why not? It is an incidental advantage that this tax would be much easier to collect than the ordinary income tax; it is much more difficult to hide the facts about one's education than it is to hide the facts about one's income."[11]

Education Vouchers

The idea of Education Vouchers can be traced to the writings of J.S. Mill, but for the additional idea of State finance.[12]

This scheme suggests that each citizen at birth receives an actual or notional book of vouchers on coupons (with a prescribed purchasing power) which entitles him to so many units of education to be bought at any time in his life. The value of the vouchers is related to some notion of the average costs of education. The vouchers represent an individual's share of the nation's educational budget. When he is going for higher education, he can spend his vouchers at the college/university, or he can save his coupons for education at a later stage of his life. The vouchers could also be supplemented by parents if they wished to do so.

The scheme has its origin in the feeling (in the U.K.) that Government intervention in education has to be curtailed, as it inhibits economic freedom. Parents are not unfit to undertake education of their children. The community's interest is confined to :

(i) legislation to ensure that parents provide their children with facilities to obtain maximum education; and

(ii) subsidization to reflect the additional value of such education to the community.

General education facilities will not be purchased by the State and supplied, but will be demanded and paid for by families. West feels that most families would be no worse off if the State withdrew from the field of education and rescinded taxes accordingly.

The Voucher Scheme will appeal to all those who would like to enjoy freedom of choice and who want to see that the education market is more responsive to the expressed needs of students.[13] It would stimulate competition on equal terms between radically different kinds of learning; raise standards of educational institutions and promote innovation. In this scheme, education is made available throughout one's life at time/times when people feel a need for it. It is argued that it has the advantage of helping even those who contribute little to direct taxation; the vouchers could be scaled inversely to income so that its value will be less the greater the income. The scheme would attract more spending on education without placing undue burden on state budgets. The prime argument in its favour is that it is a reflection of the both parental wishes and of the community interest in educating its citizens.

At the higher educational level, Wiseman suggests the need of replacement of the University Grants Committee by an increase in size of the awards made to 'qualified' student : the remainder of university finance would come from the fees of those pursuing 'vocational' courses, and from additional charges that particular universities find themselves in a position to make. At this level, the grant made for advanced education (believed to have community as well as personal value) need be less unifrom than at lower levels, so that the fact that fees at some universities were higher than at others need not debar students with small private means. Wiseman distinguishes between general and vocational education and recommends that only the latter should be subsidized.

The arguments advanced against the Voucher Scheme are :

1. The scheme would not in itself end elitism. It allows richer families to supplement vouchers with extra cash. This will lead to social separatism. Children of rich parents will enjoy a privileged position.
2. Only brilliant pupils will be selected in

reputed educational institutions and the rest will have to find place in inferior ones.

3. When profit is the main consideration, discrimination would be practised in the selection of staff also.
4. The private enterprise in education will become prosperous at the cost of the already impoverished state sector, the result would be something like an educational apartheid.
5. Competition between educational institutions may lead to an increase in costs per pupil.
6. The system would encourage religious organisations to propagate their views in the educational institutions run by them. Without state provision, the whole educational system will be dominated by organised sectors of the community.
7. Where the number of students is too small to support more than one institution, monopoly will arise and the freedom of parents will prove to be illusory. Besides the information available to parents to enable them to choose between schools/colleges may not be full.
8. Inferior institutions might more successfully practice the art of persuasion than the superior ones. This will not help an optimum allocation of resources being achieved.
9. When competition is imperfect and the service provided must be purchased by all, there is need for state intervention.

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13. Blaug writes: "External benefits, parental incompetence and equality of opportunity do not stand up as arguments for state-provided education...Despite a century of state-provided education in countries like Britain, educational opportunities are no more equally distributed now than they were 30 or even 50 years ago. We may be sure that it (a voucher scheme) will extend the range of choice, increase total expenditure on education". Mark Blaug, quoted in E.G. West, "Education : a Framework of Choice", *Readings in Political Economy* I, IEA, 1967, p. 60.

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Pattern of the Life Cycle

"Regardless of the career you choose in your new world, the sequence of phase change in your life is going to follow a somewhat set pattern—the pattern of the life cycle. If I may explain in a rather old fashioned simile—the life pattern is that today's daughter-in-law is tomorrow's mother-in-law. The common complaint is that the mother-in-law doesn't always remember her woes as the daughter-in-law. I suggest you, my young friends, that you rise above this syndrome", said Dr. Vasant Gowariker, Secretary, Department of Science and Technology, Govt. of India while delivering the Convocation Address at the Tenth Convocation of the Anna University, Madras. Excerpts

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Having completed one exciting phase of your life, you are going to step into a new world.

What's this world going to be like? This world is going to be what you make of it, of course. But on your part there may be a temptation to describe this world by the experience you have of it. Remember Walter Lippman's famous statement : "We are all captives of the picture in our head—our belief that the world we experience is the world that really exists"?

Convocation

Certainly, the world we experience is not always the world that really exists. (His Excellency's world is different from my world; your world is different from your teachers'). Indeed, we all live in desolate worlds of sorts—not only that, our individual worlds also often have wheels within wheels. And yet, in the midst of all this there is a common thread that unites us all. Along that thread, we have a common reference line which determines our validity as human beings and our relationship with the environments. It is along that common reference line that unites us all, where our individual worlds fuse into one common entity, that I would like to share with you some of my thoughts on what you may like to avoid in this new world.

I appreciate that your primary concern will continue to be one of decent survival. This is understandable. Billions of years ago, life began on earth in water. Then it changed—from water to land, from tiny reptiles to winged dinosaurs—and through all this change, through these millions of years, one form of life fought with another to survive, to take a safe foothold. Scientists are no different—you are no different—except that in your new world, there is no scope for one form of life to fight with another. Indeed, there is no scope for that kind of fight at all.

As you step into your new world and grow in it, you may almost continually be in the process of dispensing with internal incongruties. For your fructification in this new world, the process would involve not just you reconciling with others but also you reconciling with yourself. The process would involve your inner you reconciling with the temptations of your outer you. (It is that process, and the elements of that process, that I would be briefly speaking about this afternoon).

As you go out of the portals of this university, you may pursue various kinds of careers. You may decide to work in an academic institution, a research laboratory or industry ; some of you may choose to be entrepreneurs—job generators rather than job seekers. But regardless of what you choose to do, time will continue to fly. As you go along, there will be phase transformations in your life. Somewhere on the line, you will change over from being a "working scientist" to a "science manager" ; from a lecturer, you will become a reader and then a professor and a dean or even a Vice-Chancellor. All along this path, you will be gathering experiences—at each phase, at every phase of your life which will add up to your cumulative life capital of valuable experiences. I would urge you to please preserve this experience very carefully. Please don't forget your own experience gathered at each phase of your life. When you become a lecturer, for instance, please don't make your students suffer what you did when you were a student. Regardless of the career you choose in your new world, the sequence of phase change in your life is going to follow a somewhat set pattern—the pattern of the life cycle. If I may explain in a rather old fashioned simile—the life pattern is that today's daughter-in-law is tomorrow's mother-in-law. The common complaint is that the mother-in-law doesn't always remember her woes as the daughter-in-law. I suggest you, my young friends, that you rise above this syndrome.

How different would this world be if each of us were to carefully ensure that we don't make others go through the same bad patches of our experiences, especially when we have the ability to insulate others from the suffering that we went through ?

My young friends, you are no longer students in the conventional sense (you are now coming out of the university). But you have had your experience as students. Please recall how many times you may have wished that your teachers were this and not that—that they did this and not that ? I am not at all questioning the legitimacy of your perceptions—nor of the issues which may be ethical, behavioural or professional. The only point I am trying to make is that well, when you become yourself a member of the faculty no matter where (here or elsewhere), please remember your own perceptions as students—on what set of environments students would feel better fructified ?

Having had to do a lot with young scientists and young faculty members, let me share with the senior faculty members, what seem to be the woes of young scientists and young faculty members. I mean by a young scientist some one below, say 35 or 40 years of age. Beyond 45-50 years of age a daughter-in-law starts becoming the mother-in-law. When this transformation starts taking place, many "working scientists" start becoming "science managers". This transformation or phase change, if you like is normally not very sharp. As an analogy, I may point to the difference in dissolution characteristics of a low and a high molecular weight substance. As you are aware, if you dissolve common salt, a low molecular weight substance, in water you know exactly when the solution becomes saturated. If, on the other hand, you dissolve polyvinyl alcohol (PVA) in water, you know that the saturation point is almost never reached.

Many a transformation in human life is of the PVA dissolution in water kind, like quite often is the transformation of a "working scientist" into a "science manager". The phase change is not sharp but can be characterised by certain symptoms. The symptoms are : (a) the number of young scientists working under you becomes large enough for diversity to start coming into picture; (b) some administrative responsibility starts befalling on you; (c) there is increase in committee works, increase in travel.

When these symptoms start showing, a "working scientist" can be considered as edging over to become a "science manager". There is nothing wrong with this. The only problem is that he is not perceptive enough to take note of this phase change. The consequence is typical : if a young scientist comes up with a brilliant proposal for submission to say DST, this senior scientist beyond the age of 45-50 asks the young scientist to be a Co-investigator rather than a Principal Investigator (which the Young Scientist really is !).

My young friends, I hope you don't do this when you become senior leaders in your life. I hope that when you progress in your life, you will remember your own experiences as students and as juniors.

I suggest that in some sense, the administrative system—with whatever other problems may have—has a built-in clarity in this regard. When a Joint Secretary becomes an Additional Secretary, for instance, he does not conduct himself as a super Joint Secretary. When an Additional Secretary becomes a Secretary, he does not conduct himself as if he is a Joint Secretary and an Additional Secretary rolled into one.

I feel that scientists from research and academic community would do well to develop an insight into this particular trait of our colleagues in administration. They seem to develop some healthy detachment for the phase they have gone past and show a much more matured outlook than their scientific counterpart. I believe that scientific and academic community can also develop similar maturity. Scientists have the ability to save themselves from Walter Lippman's warning (—that the world we experience is the world that really exists). In the scientist's trait for search of truth is implicit his ability to distinguish real from imaginary. My young friends, I hope you will constantly invoke this special feature of yours—your inherent ability to discern the real from the imaginary. I hope you will constantly bring into play the full force of your scientific training to build on experience and never to kick off that ladder of experience when you climb up in your new world.

Ladies and gentelmen, I have made some comments which some of you might consider not very mild. But I am of the view that if you want things to change for better smoothly and swiftly, several people like you must make a determined effort simultaneously. Scientists some times tend to procrastinate. And this procrastination reflects on our schedules for changes, on our agendas for improvement. The things we want to change for better—whether in academic institutes, research laboratories or production places—must be addressed on war footings. The targets must be in near impossible time frames—even if somebody hauls us up later for time overruns.

Having spent nearly two decades of my professional life at a Space Centre at Trivandrum, which carries the name of another visionary, Vikram Sarabhai, I am reminded of one of his statements 22 years ago at a Convocation Address. It is worth quoting this statement in the original : "An analysis of the reasons why, in spite of the Scientific Policy Resolution of the Government of India, we have not made a better investment in research and development leads us to complex issues. Among these, one fact stands out very clearly. This is related to the attitude of scientists and technologists themselves. We have projected and come to accept unreasonably large time constants for undertaking even important national tasks of great urgency. We have got accustomed to public sector projects which take five to seven years to mature and research and developmental projects which take eight to ten years to complete. Both these time factors are, I submit, totally incongruous in the contemporary world of accelerating change. We have to learn to set up normal types of factories in one to two years, at least in such fields as electronics. Recruitment and training of personnel for production can be undertaken simultaneously. We have also to learn to mobilize research groups to be able to undertake development of systems in periods of two to three years. It is only then that we may hope to keep our heads above water and swim with the advanced nations of the world". □

Autonomous College—State Relationship

(*Continued from page* 2)

implying that they would not get special or higher pay scales. This must be so if autonomous colleges are not to develop an elitist attitude. But the state governments may well offer other incentives. For example, greater facilities for preparing and communicating research papers, participation in subject conferences and orientation programmes could be offered to the faculty which is expected to remain engaged in course development and syllabus—updating in addition to routine teaching.

The State should also allow a measure of financial flexibility to autonomous colleges for their smooth functioning. For example, the proposals for conversion of some posts within the sanctioned block grants could be easily acceded to. A little additional grant would go a long way in encouraging introduction of educational technology. But unfortunately, as things stand, even matching share is not readily provided for the UGC's developmental and other assistance programmes, when such projects imply that total value of the assets created in a college would be double or even four times the amount invested by the State. The computers provided by the UGC have remained under-utilised for want of sanction of posts of their operators. This gives an impression that many in the state secretariats and directorates consider autonomous colleges as being the UGC's baby, whom they would pretend adopting only for the seven lakh rupees per annum each one of them would be bringing for five years. If so, the UGC would be better advised to hold a frank discussion with the policy planners in the states rather than rejoicing at latters' apparent acceptance of this well conceived reform in the field of higher education. □

INDIAN COUNCIL OF MEDICAL RESEARCH

VECTOR CONTROL RESEARCH CENTRE
PONDICHERRY

M.Sc. (Medical Entomology)

ADMISSION NOTICE—1990-91

Applications are invited for admission to the 2 year M.Sc. Course (Trimester Pattern) in Medical Entomology, affiliated to the Pondicherry University. Those who have passed B.Sc. with Zoology or Biology as one of the subjects, or B.Sc. in Medical Laboratory Technology are eligible for admission. The VCRC is a WHO Collaborating Centre and has excellent facilities for research and training in vector borne diseases and their control. The Govt. of India has equated M.Sc. (Med. Ent.) with M.Sc. Zoology/Entomology.

Six candidates (one seat meant for SC/ST candidates) will be selected after an entrance test. Students admitted after entrance test will be paid a monthly fellowship of Rs. 800/- for 2 years from the ICMR. Only first class graduates (or its equivalent grade) will be called for the written entrance test (SC/ST candidates securing II Class in the qualifying degree are eligible). Those who are appearing in the qualifying degree examination but whose results are not available, may also apply. Another three will be admitted from inservice candidates sponsored by State/Central Governments/Research Institutions. There will be no entrance examination for inservice candidates. Another three seats are reserved for WHO sponsored candidates. Application form and Prospectus which give all details can be had from, "The Director, Vector Control Research Centre, Pondicherry-605006" on or before **15th June, 1990** on payment of Rs. 25/- by a crossed Indian Postal Order drawn in favour of the "Director, Vector Control Research Centre", payable at Pondicherry-605006. The last date for receipt of completed application form is **9th July, 1990.** Entrance test on **29th July, 1990** will be held in Pondicherry.

Dr. P.K. Rajagopalan
DIRECTOR

Trends in Communication Training & Research

The six-day national workshop on 'Trends in communication training and research' held recently at the Department of Communication and Journalism, Osmania University, urged the UGC to provide basic facilities to all journalism departments in the country for better education. It also sought the cooperation of the Union Ministry of Information and Broadcasting, State Information Departments, audio-visual research centres and other similar professional bodies in training students and the faculty in the departments of Mass Communication and Journalism.

The workshop called upon the journalism teachers to be abreast with latest trends in the fields of mass communication and journalism. It suggested holding of similar workshops and refresher courses for this purpose. Expressing concern over the lack of relevant textbooks by Indian authors, the workshop urged the UGC to encourage journalism teachers to take up these projects on a priority basis, especially in Indian languages.

Delivering the valedictory address, Prof. Anjan Kumar Banerji, Chairman, UGC Panel on Mass Communication, said that a successful journalism teacher should be a successful journalist first. He emphasised the need to start diploma or degree courses in Public Relations, Science Communication, Film Studies.

Prof. S. Bashiruddin said that journalism teachers should widen their horizons and update their knowledge from time to time to be effective teachers.

Mr. Abdur Rahim, Director of the workshop and Head, Department of Communication and Journalism, Osmania University wanted revitalisation of Indian journalism education.

Nearly 40 delegates from over 20 universities in the country including many heads of departments, senior professors and teachers participated in the workshop.

Bankers Meet at Alagappa University

The tenth bankers meet was held on 9th March 1990 in the Department of Bank Management, Alagappa University. Dr. R.M. Chidambaram, Head of the Department briefly highlighted the importance of planning in banks. According to him, planning assumes greater significance in the Indian banking industry, because of massive branch expansion, spectacular growth in the volume of business and ever increasing manpower since the nationalisation of major commercial banks. Short term planning, Long term planning, Strategic planning, Organisational planning, Operational planniog and Profit planning are the different plans adopted by the Indian banking system to improve their productivity, he said.

Mr. V.S. Ramamoorthy, Manager, Canara Bank in his lecture highlighted the nature and need of different plans formulated by banks. In our conntry, long term plans are made for 4 to 5 years. Short term plans are made for one year to facilitate planning at the grassroot level. Grassroot level planning starts with branch managers' conference and performance budgeting. This practice is usually followed by Business Plan Conferences (BPCs) to settle the budget. The settled budget is analysed through SWOT Analysis (Strength, Weakness, Opportunities and Threat), ABC Analysis and Environmental Scanning by experts. To make the analyses more meaningful, periodical review of plans is undertaken by the management through inspection and executives' visit and by organising inter-face session and non-performers' meets. Mr. Ramamoorthy added. This was followed by a question-answer session in which postgraduate and research students of Bank Management actively participated.

Folklore Department at Kalyani

A full-fledged Department of Folklore has recently been inaugurated at the Kalyani University. At present it has started M.A., Doctoral and Post-Doctoral Programme in folkloristics. The Department with inter-disciplinary course content desires to fulfil three dimensional work of teaching, research and documentation. As a part of study course, the department has concentrated on field-work with the objective of involving the students in action programme and to make fertile link between classroom and rural masses in terms of social awareness and development of practical skill.

The Department of Folklore envisages to develop an Audio-Visual Complex comprising Documentation Centre, Folklife Museum and Technical Unit. It hopes to publish Departmental Bulletin, Research Monograph and a Journal of Forklore. It also plans to organise local, national and international Seminars and workshops at frequent intervals.

Executive Development Programme

The Department of Engineering and Mining Machines, Indian School of Mines, (ISM) conducted one week Executive Development Programme on "Mine Power System Control and Reliability" from February 26 to March 3, 1990. The Course was specially designed to cater the recent trends and state of applications in the planning, design and operation of both surface and underground mine power systems with their intricate controls, protections and reliability. In his inaugural address Prof. D.K. Sinha, Director, Indian School of Mines observed that more mechanisation of the mining industry in the country had introduced the need for designing reliable mine power supply systems to run the production equipment with greater continuity for uninterrupted mineral production.

The Course Participants (11 in numbers) were sponsored by M/s SAIL, TISCO, BCCL, BCML, Singareni Colliery Co. Ltd., WCL and ISM. Ten of them were from E & M cadre ranging from Foreman/Asst. Engineer to Superintending Engineer levels; and one Junior Research Fellow working for M. Tech. (by Research) Degree. The Course Co-ordinators were Mr. P.K. Ramasubban and Mr. K. Kumar.

Mr. Y.K. Dhawan, Director of Collieries, TISCO, Jamadoba, who was the Chief Guest at the Valedictory Function awarded certificates to the Course Participants. In his Valedictory Address, Mr. Dhawan emphasised upon the training needs of the Executives to maintain power with high degree of reliability and appreciated the valuable services rendered by the ISM under its Continuing Education Programme.

HAL Essay Competition 1990

In order to encourage talent among engineers, research workers and scientists (preferably below the age of 35 years) in the field of aeronautics in the country, the Management of the Hindustan Aeronautics Limited (HAL), Bangalore, have offered to donate two prizes of Rs. 2,000/- each to be awarded to authors of essays adjudged by the Aeronautical Society of India to be the best. The Society, therefore, invites essays on the following topics :

(a) Electronics and Computer Application in Aircraft.

(b) Indigenous Design & Development of By-pass Engine for Jet Trainers-Capability and constraints.

Each essay should be of 3,000 words. Two copies (neatly typed) should be furnished to the Secretary (Admn.), Aeronautical Society of India, 13-B, Indraprastha Estate New Delhi-110002 by August 31, 1990.

The date of birth of the author should also be indicated in the forwarding letter.

National Library for the Visually Handicapped

The National Institute for the Visually Handicapped located at 116, Rajpur Road, Dehradun-248 001 has set up a National Library for the Print Handicapped. It offers Braille, Talking books and Reference Library services, free of charge, to the visually handicapped—students and adults, spastics, senior citizens and professionals. Salient features of the collection are Braille books in Hindi, English, Kannada and other Indian regional languages; Hindi and English periodical audio digests; and Education and entertainment books on compact cassettes for class IX to Post-graduate level.

Indian Institute of Technology
MADRAS-600 036
No. F/Acad/ARU/Advt./90

ADMISSIONS TO POST GRADUATE COURSES M.Sc , M.TECH (WITH SCHOLARSHIP) M.TECH. (SPONSORED), M.S. (ENTREPRENEURSHIP) & M.S./PH.D. PROGRAMMES BY RESEARCH FOR THE ACADEMIC SESSION COMMENCING IN JULY, 1990.

Candidates are advised to refer to the detailed advertisement which appeared on Saturday, 10th March, 1990, in the Hindu, Madras (all editions); Indian Express, Madras (all editions); Times of India, Bombay; Hindustan Times, New Delhi; Statesman, Calcutta and University News, New Delhi.

Application Fee : Rs. 25 by D.D.

IMPORTANT DATES

—for M.S./Ph.D. Programmes & M.S. (Entrepreneurship) :
Last date for receipt of requests for application by Post **—12th April, 90**
Last date for receipt of completed applications **—24th April, 90**
Probable date for Interview/Test . . . **11th & 12th June, 90**

—for M.Sc., M.Tech. (with Sch.) & M.Tech. (Sponsored) :
Last date for receipt of requests for application by Post **—23rd April, 90**
-do- At the counter **—3rd May, 90**
Last date for receipt of completed application
M.Tech. (with sch.) & M.Sc. **—4th May, 90**
M.Tech. (sponsored) **—11th May, 90**

DY. REGISTRAR (ACAD.)

News from Agril. Varsities

Optimization of Resource Use in Farming

A new scheme entitled "Study on the optimization of resource use in the farming system" at Directorate of CARDS, Tamil Nadu Agricultural University, Coimbatore has been sanctioned. The main purpose of this scheme is to explore the possibilities of increasing farm income over the currently practised production plans of farms operating under different farming and cropping systems. The scheme wil be implemented with the objectives of documenting the current production plans of farms operating under different cropping and farming systems, identifying the socio-economic and technical constraints in farm production and derive an optimal plan given the existing resource constraints and recommending an optimal product mix that would maximise profits and estimate feasible input requirements required to implement such an optimal plan. The project is funded by Action Aid, Bangalore.

Biological Control of Insect Pests

The Indian Council of Agricultural Research (ICAR) has sanctioned a new scheme entitled Biological control of a few major insects pests associated with sugarcane, coconut, banana and mango crops by using entomophilic nematodes at the Agricultural College and Research Institute, Tamil Nadu Agricultural University (TNAU), Madurai for a period of three years.

The main purposes of this scheme are surveying for entomophilic nematodes in forests and agro-eco-systems, testing parasitic potential of certain entomophilic nematodes, testing efficacy of *Steinernema* spp. and *Heterorhabditis* spp. for biological control of selected insect pests on sugarcane, coconut, banana and mango and Mass multiplication of entomophilic nematodes useful for biocontrol and study on their compatibility with other bio control agents.

News from UGC

INSAT-1B Programme of UGC

Between 2nd April to 9th April, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

2.4.90

"Simple Harmonic Motion"
"Understanding Unemployment—I"
"Raw Materials : Bananas"

3.4.90

No Telecast

4.4.90

"Sieve Analysis"
"The French Revolution"
"Pomology—The Science of Fruits"

5.4.90

"Computer Memory—I"
"Objectives of Language Learning—I"

6.4.90

"Gift of Numbers—II"
"Juvenile Delinquency : The Prodigal"
"The Name of the Game Comouflage"

7.4.90

No Telecast

8.4.90

No Telecast

9.4.90

"Classical Mechanics—9 : Symmetries"
"Entrepreneurs & Enterprise : Case Study—4"
"Betelvine Cultivation—II"

2nd Transmission

12.00 noon to 1.00 p.m.

2.4.90

"Spectroscopy"
"Management Functions and Behaviour—Decision Making Styles"
"The Fight Against Hunger : Man Made Protection—I"

3.4.90

No Telecast

4.4.90

"New Technologies in Printing"
"Pages From the History : The Egyptian Mummy"

"Organisation and Expression of Genes—II : DNA Supercooling and Gene Expression"

5.4.90

"Computer Literacy—I : Information Processing System"

"The Story of Words—I"

6.4.90

"Mathematical Sciences : An Interview with Prof. E.C.G. Sudarshan"

"Understanding China"

"Ecosystem—II : Murmur in the Brook"

7.4.90

No Telecast

8.4.90

No Telecast

9.4.90

"The Race : A Programme on the Cyclotron"

"Management Functions and Behaviour—Personnel Functions"

"The Fight Against Hunger : Man Made Protein—II"

FIP Award for UGC Journal

Physics Education, a quarterly journal of higher education sponsored by the University Grants Commission (UGC) has been awarded second prize in the periodical category for 1988-89 by the Federation of Indian Publishers.

The six-year old science quarterly deals with education and studies in physics at the level of undergraduate and postgraduate studies. It contains articles on wide-ranging topics that are of interest not only to physics students and teachers but also to those from chemistry, mathematics, engineering and other allied disciplines and provides a forum for teachers of physics in colleges and universities and other institutes of higher education.

Another three similar journal viz. Mathematical Education Chemistry Education and Biology Education are also being publishe under the sponsorship of th UGC for the benefit of the students and teachers in these subjects.

News from Abroad

Computer Research Centre in Adelaide

Adelaide, in South Australia, will become a focal point for the computer industry with the establishment of an initiative in information science and technology at Flinders University. The multi-million dollar expansion at the University is a joint research and teaching project between Flinders and the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

A leading computer engineer, Dr. Craig Mudge, has been appointed to lead it. Dr. Mudge will steer a wide range of new teaching and research activities in information science and technology. These will build on existing strengths at Flinders in computer and mathematical sciences.

Dr. R. H. Frater, director of CSIRO's Institute of Information and Communications Technologies, said that private sector funds would supplement those from Flinders and the CSIRO. Discussions on joint ventures were being held with major computer companies.

Genetic Resources & Heritage Centr

The University of Queenslan in Brisbane, is setting up a colle tion of genetic material from som of Australia's most endangere animal and plant species. The colle ction, which will be known as th Centre for Genetic Resources an Heritage (CGRH), will be a repos tory for DNA and cell sample The collection will be part of th university's Centre for Molecul Biology and Biotechnology.

According to Professor Jo Mattick, Director of the Centre, t collection would be a "gene Louvre", where vital informati about a species' structure cou be preserved. It could nev be an alternative to conservati measures to protect animals a their habitats, he said. "Gene material contains all the inform tion about an organism's stru ture, function and developmen Professor Mattick says. It is li a reference book.

Technology has now impro to the stage that collection, pres vation and analysis of DNA cell samples can be done routin yet species are becoming extinc the rate of more than one a worldwide, he added.

Book Review :

A REAL CONTRIBUTION

S.P. Ruhela*

Gupta, K.M., Moral Development in School Children. Gurgaon, The Academic Press, 1989. Rs. 200/-.

This is a doctoral research study in Education conducted by K.M. Gupta of the Department of Teacher Education & Special Education of the NCERT, New Delhi. The book is divided into seven chapters. In the first chapter 'Morality in Context', the author highlights the recommendations of various Commissions on Education in India in regard to moral education and also briefly presents the various approaches to the study of Moral Development. In the second chapter, the concept of morality has been examined from philosophical, psychological as well as sociological perspectives quoting the authorities in the respective fields. It has been done in a very brief yet masterly manner. The third chapter 'The Footprints' highlights the theories of moral development given by psychologists, Piaget and Kohlberg. Then the author has dealt with the problem of his study in an empirical manner. He has conducted his empirical study on 831 boys and girls of government and aided schools studying in Classes VII, IX and XI. The research tools, MRS (Moral Reasoning Scale) and MDS (Moral Dilemma Scale) are innovative and interesting. As many as sixteen hypotheses have been formulated and tested. Since the researcher has a good background of mathematics and statistics, he has been able to handle a mine of data using computer calculations in an excellent manner. The findings have been given in the form of tables and graphs. The study is a neat, splendid and really useful one. The way it has been done and presented in book form may well be a good specimen of the type of research studies that ought to be done by researchers in education, psychology and sociology.

The author has taken three components or dimensions of morality: moral reasoning, moral judgement and reformatory zeal. The third one is his real contribution, since none of the earlier writers and researchers had emphasised this dimension. His conclusion is that "Our authoritarian system of education discourage thinking and autonomy. The first lesson every child is made to learn, is obedience. That is inimical both to morality and democracy. One has to learn to withstand pressures and have the courage to do what one thinks is right, regardless of consequences. Fearlessness, readiness to take risks, a strong sense of justice and supremacy of right, are all necessary for people to develop autonomy, the most important component of morality, . . . Reformatory zeal is absolutely necessary...... Any act motivated by fear or greed is immoral, however, good the act may be in itself." This is the gist of the last chapter 'The Message'; it is indeed very inspiring and refreshing.

Well, it is always good to give such an inspiring message now substantiated by such a painstaking and deep research study, to school children, and also to the older boys and girls in colleges and universities. But the question is who will teach morality to our administrators in our schools, colleges and universities? While students and teachers are expected to be moral, accountable and reformists, and even agents of social change, modernization, secularism, socialism and what not, our educational administrators as reference groups are indeed, by and large, hypocrites and hopeless. The reviewer would have been pleased if K.M. Gupta had also tried to examine the role of educational administrators as well in his study for they are very crucial reference groups.

Gupta's study is not only an excellent piece of research, but it has also been beautifully printed. The price of Rs. 200/- for this fascineting book of lasting value is quite justified. The researcher recommends this book to all teachers, university personnel and researchers in social sciences, as it has a model and a message for each of these categories.

Professor of Education, Faculty of Education, Jamia Millia Islamia, New Delhi.

We Congratulate . . .

(1) **Dr. S.K. Dogre who has been appointed the Vice-Chancellor of the Mahatma Phule Krishi Vidyapeeth, Rahuri.**

(2) **Dr. A.M. Michael, Director, Indian Agricultural Research Institute, New Delhi, who has been nominated as Secretary-Treasurer of the Indian Agricultural Universities Association.**

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Journalism

1. Rajasekharan Nair, J. *Communication through montage and its negation : Comparative study of battleship potemkin and 'Stalken'.* Kerala. Dr. M. Thangadorai, Reader, Department of Journalism, University of Kerala, Kariavattom.

Psychology

1. Aprajita. *Effect of nutritional counselling on menstrual distress and personality of women with high premenstrual tension syndrome.* Panjab. Prof. (Mrs.) V. Mohan, Department of Psychology, Panjab University, Chandigarh.

2. Parthi, Komila. *A study of correlates of empathy among college and university students.* Panjab. Dr. A. Bhandari, Department of Psychology, Panjab University, Chandigarh.

3. Sahni, Sanjeev P. *A study of drug addiction in Northern India : Its genesis and consequenses with special reference to heroine.* Panjab. Prof. Jitendra Mohan, Department of Psychology, Panjab University, Chandigarh and Prof. V.K. Verma, Department of Psychiatry, Postgraduate Institute of Medical Education and Research, Chandigarh.

Sociology

1. Chonde, G.M. *A sociological study of trade unions in Kolhapur City.* Shivaji. Dr. R.B. Patil, Department of Sociology, Shivaji University, Kolhapur.

2. Mathew, Suseela. *Psycho-social dimension of old age in Bangalore City.* Devi Ahilya. Mrs. S. Pothen, Department of Sociology, Govt. New Girls Degree College, Indore.

3. Parminder Kaur. *Impact of November 1984 riots : A comparative study of the migrant Sikh families to Panjab and local Sikh families.* Panjab. Dr. K. Gopal Iyer, Department of Sociology, Panjab University, Chandigarh and Dr. (Mrs.) R.M. Sethi, Department of Sociology, Panjab University, Chandigarh.

4. Sahoo, Bhupati Bhusen. *Delhi Sikhs and the Punjab crisis : A sociological analysis.* Panjab. Prof. K. Gopal Iyer, and Prof. P.N. Mukherjee, Department of Sociology, Panjab University, Chandigarh.

5. Shergill, Shamsher Singh. *Dairy co-operatives and their role in rural development of Panjab.* Panjab. Prof. P.N. Pimpley, Department of Sociology, Panjab University, Chandigarh.

6. Waghe, Mangala Mukund. *Educational development of children in Slum areas : A study with special reference to five slum areas of Kolhapur City.* Shivaji. Dr. S.M. Dahiwale, Department of Sociology, Shivaji University, Kolhapur.

Social Anthropology

1. Abbas, S.M. *Muslim tradition in India : A model in social-adjustment.* Ranchi. Prof. (Dr.) V.S. Upadhyay, U.G.C. Centre of Advanced Study in Anthropology, Ranchi University, Ranchi.

2. Pandey, V.P. *The Tana Bhagat of Chotanogpur.* Ranchi. Dr. P.C. Oraon, Department of Anthropology, Ranchi University, Ranchi.

Political Science

1. Arya, Sushila. *Bharat mein vyavasthapika ka badlta swaroop.* Devi Ahilya. Dr. S S. Bagga, Asstt. Prof., Department of Political Science, New Girls Degree College, Indore.

2. Krishnakumari, S. *Coalition politics in Kerala, 1970-85.* Kerala. Dr. K. Sadasivan Nair, Assoc. Prof., Institute of Management in Govt., Trivandrum.

3. Nazaruddin, M. *Role of Muslim League in Kerala politics since 1976.* Kerala. Dr. C.N. Somarajan, Raji Bhavan, Near the Telephone Exchange, Kundara P.O. Kundara.

4. Rajan, A. *Communal politics and coalition govts. in Kerala from 1967-1987.* Kerala. Dr. T. Varghese, Lecturer, St. John's College, Anchal.

5. Sabhlok, Veena. *Madhya Pradesh kee rajniti mein Hindi Press kee bhumika : Purva Mahakoshal kshetra ke vishesh sandarbh mein.* HS Gour. Dr. R.P. Goutam, Lecturer, Department of Political Science and Public Administration, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

6. Sisubalan, S. *Political elites in Kerala : A case study of the Congress and CPI (M) at the state level.* Kerala. Dr. M. Sreenivasan, Marthandamandiram, Pattathanam, Quilon.

7. Sohani, Ravindra Kumar. *The nature of emerging political leadership in urban setting of India : A case study.* Devi Ahilya. Dr. Arvind Maru, Prof., Department of Political Science, Govt. Girls P.G. College, Indore.

Public Administration

1. Kamotra, Pritam Singh. *Cooperative education and training : A study of organisation and working of the Haryana State Cooperative Development Federation Ltd., Chandigarh.* Panjab. Dr. B B. Goel, Department of Public Administration, Directorate of Correspondence Courses, Panjab University, Chandigarh.

Education

1. Chadha, Tanya. *Locus of control as related to personality characteristics, adjustment and scholastic achievement of Panjab University students.* Panjab. Dr. (Mrs.) Pushpa Chaudhry, Department of Education, Panjab University, Chandigarh.

2. Chandel, Attar Singh. *A comparative study of selected physical fitness, physiological and anthropometric variables of tribal and non-tribal students of Himachal Pradesh,* Panjab. Dr. S.N. Sharma, Department of Physical Education, Panjab University, Chandigarh.

3. Jagdish Kaur. *An assessment of motivation for sports participation and performance of Panjabi athletes.* Panjab. Dr. Gurbaksh Singh Sandhu, Department of Physical Education, Panjab University, Chandigarh.

4. Odiwour, Wyeliffe Humphrey. *A cross-cultural study of activism amongst university students in relation to their personality characteristics, parental ideology and socio-economic status.* Panjab. Dr. (Mrs.) P. Chaudhry, Department of Education, Panjab University, Chandigarh.

5. Oommachan, K. *Educational reforms in Kerala : A case study of the educational reports introduced by the first Communist Government.* Kerala. Dr. T. Varghese, Lecturer, St. John's College, Anchal.

6. Pinglia, Rachhpal Singh. *Perceived teacher stress : A study of its correlates in high and senior secondary school teachers of Panjab.* Panjab. Prof. J.N. Joshi, Department of Education, Panjab University, Chandigarh.

7. Sood, Indu. *The effect of different methods of teaching of learning outcomes of adult learners in the adult education centres at Chandigarh.* Panjab. Dr. N.N. Pangotra, Director, Adult and Continuing Education, Panjab University, Chandigarh.

Commerce

1. Jain, Surekha Ajay. *Kendriya utpad va shulk adhiniyam : Ek vishleshnatmak adhyayan.* Devi Ahilya. Dr. R.P. Baldawa, Asstt. Prof., Shri Vaishnav Commerce College, Indore.

2. Padia, Manoj Kumar Nanalal. *Madhya Pradesh Vitt Nigam mein sewavargiya sambandh ka ek vishleshnatmak adhyayan.* Devi Ahilya. Dr. K.C. Khandelwal, Prof (Retd), P.M.B. Gujarati Commerce College, Indore.

Management

1. Gupta, Rajiv. *International marketing strategy for Indian bicycles.* Devi Ahilya. Dr. R.D. Agarwal, Prof. and Head, Institute of Management Studies, Devi Ahilya Vishwavidyalaya, Indore.

2. Vyas, Ramkrishna. *Profitability of commercial banks in India : A comparative study of Indian public sector banks, Indian private sector banks and foreign bank branches operating in India.* Devi Ahilya. Dr. R.D. Agarwal, Prof and Head, Institute of Management Studies, Devi Ahilya Vishwavidyalaya, Indore.

HUMANITIES

Philosophy

1. Jaiswal, Ram Jee. *Kautilya ke Arthshastra mein pratipadit rajniti kee dristi mein Pandit Nehru ke rajnitik dristikon kee sameeksha.* BHU. Dr. Ramashankar Tripathi, Lecturer, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

Fine Arts

Architecture

1. Roy, Manisha. *Ritual terracotta of Tamil Nadu with special reference to Aiyanar and the related deities.* Panjab. Dr. Jyotindra Jain, and Prof. D.C. Bhattacharya, Department of Fine Arts, Panjab University, Chandigarh.

Drawing & Painting

1. Singh, Kavita. *The pictures of showmen : The utilization and structure of paintings within the picture-showmen tradition.* Panjab. Prof. B.N. Goswamy, Department of Fine Arts, Panjab University, Chandigarh.

Theatre

1. Veena. *A comparative study of the folk theatre forms of Northern India : Bazigars, Sangs, Naqqals and Rasdharias of Punjab and folk theatre forms of the Soviet Union Gypsy*

theatre in the Siav, Moscow Region. Panjab. Mr. G. Kumara Verma, Reader, Department of Indian Theatre, Panjab University, Chandigarh and Dr. H.L. Vasudev, Department of Russian, Panjab University, Chandigarh.

Language & Literature

English

1. Choubey, Raksha. *Sense of alienation in Nathaniel Hawthorne's writing.* Devi Ahilya. Dr. R.N. Sharma, Ex-Prof. and Head, Department of English, Govt. Arts and Commerce College, Indore.

2. Koushki, Mahmood Mehrabi. *Isolation in the selected novels of Joseph Conrad.* Panjab. Prof. (Mrs.) Nirmal Mukherji, Department of English, Panjab University, Chandigarh.

3. Kulkarni, Prakash Eknath. *Stylistic analysis of Ernest Hemingway's novels.* Devi Ahilya. Dr. R.K. Bajpai, Prof. and Head, Department of English, Govt. Postgraduate College, Mhow.

4. Ojha, Anita. *Anticipations of feminism: Explorations of the faminine psyche in Fanny Burney, Jane Austen and George Eliot.* Panjab. Dr. D.C. Saxena, Department of English, Panjab University, Chandigarh.

5. Savant, R.D. *Wole Soyinka : Socio-cultural ethos in his plays.* Shivaji. Dr. A.A, Kadam, Kisan Veer Mahavidyalaya, Wai, District Satara.

6. Sood, Manorama. *The poetic techniques of Robert Frost.* Devi Ahilya. Dr. M.M. Mahashabde, Prof, Department of English, Govt. Arts and Commerce College, Indore.

7. Vhatkar, Jeevan Shripatik. *The theme of poverty and exploitation in the Indian novel in English with speeial reference to Mulk Raj Anand, Bhabani Bhattacharya and Kamala Markandaya.* Shivaji. Dr. P.R. Kher, Department of English, Shivaji University, Kolhapur.

French

1. Antony, Cecillia. *La femme dans le theatre de moeurs de L'entre-deux-guerres, 1919-1939.* Panjab. Dr. S. Jathaul, Department of French, Panjab University, Chandigarh.

Sanskrit

1. Bhalaik, Pushpa. *Arsh mahakavyon mein shiksha.* HP. Dr. (Mrs.) Vidya Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

2. Deendayal, U.R. *Sanskrit naikateel vishkambhkache ananyasadharan mhatva.* Shivaji. Dr. A.N. Vatkar, Department of Sanskrit, Rajaram College, Kolhapur.

3. Kaushalya Devi. *Kyuram Jari ka natyashastriya adhyayan.* HP. Dr. Virender Kumar Mishra, Department of Sanskrit, Himachal Pradesh University, Shimla.

4. Lekh Ram. *Paniniya vyakaran mein paribhasha sutron ka vivechnatmak adhyayan.* HP. Dr. Nardeo Shastri, Department of Sanskrit, Himachal Pradesh University, Shimla.

5. Prashar, Sarbasumangla. *Acharya Bhamah ka alankarvivechan.* HP. Dr. Maan Singh, Department of Sanskrit, Himachal Pradesh University, Shimla.

6. Rajender Parshad. *Mahabharat ke shanti parvagat kriya roopon ka bhashik adhyayan.* HP. Dr. (Mrs.) Kamla Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

7. Sant Ram. *Kalidas virachit rupkon mein alankar yojan.* HP. Dr. Prem Lal Thakur, Department of Sanskrit. Himachal Pradesh University, Shimla.

8. Satish Knmar. *Nashdiyacharit kee anta kathyen : Ek samalochnatmak adhyayan.* HP. Dr. (Mrs.) Kamla Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

9. Sehgal, Rajni. *Vrihadevatagat akhyan : Ek sameekshatmak adhyayan.* HP. Dr. Maan Singh, Department of Sanskrit, Himachal Pradesh University, Shimla.

10. Sharma, Babu Ram. *Aranyakon mein pratibimbit dharam evam darshan.* HP. Dr. Maan Singh, Department of Sanskrit, Himachal Pradesh University, Shimla.

11. Sharma, Chanchal. *Ramayangat vanspati evam vanya prani.* HP. Dr. (Mrs.) Vidya Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

12. Sharma, Daya Ram. *Balmiki Ramayan mein lalit kalyan.* HP. Dr. (Mrs.) Vidya Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

13. Sharma, Dina Nath. *Upanishdik pratikon ka samalochnatmak adhyayan.* Panjab. Dr. Ganesh Datt Bhardwaj, Vishveshvaranand Vishwa Bandhu Institute of Sanskrit and Indological Studies, Sadhu Ashram, Hoshiarpur.

14. Sharma, Duni Chand. *Paniniya vyakaran shastra mein shastratav sampadak paribhashayon ka sameekshatmak adhyayan.* HP. Dr. Nardeo Shastri, Department of Sanskrit, Himachal Pradesh University, Shimla.

15. Sharma, Madan Mohan. *Mahakavi Shaktibhadra virachit Ashcharyachudamani ka natyashastriya adhyayan.* HP. Dr. Virender Kumar Mishra, Department of Sanskrit, Himachal Pradesh University, Shimla.

16. Sharma, Mahesh Chandra. *Sanskrit ke pramukh prahasnon ka sameekshatmak anusheelan.* Devi Ahilya. Prof. Shri Banshidhan Shastri Musalgownkar, Asstt. Prof., Govt. Sanskrit College, Indore.

17. Sharma, Meena. *Arsh kavyon per adharit Bhas ke roopkon mein alankar-yojana.* HP. Dr. (Mrs.) Kamla Devi, Department of Sanskrit, Himachal Pradesh University Shimla.

18. Sharma, Om Prakash. *Himachal kee Sanskrit sahitya ko den.* HP. Dr. (Mrs.) Vidya Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

19. Sharma, Pawan Kumar. *Maghvirachit Shishupalvadh : Ek sanskritik adhyayan.* HP. Dr. Prem Lal Thakur, Department of Sanskrit, Himachal Pradesh University, Shimla.

20. Sharma, Promila. *Magh-virachit Shishupalvadh kee anta kathayen : Ek samalochnatmak adhyayan.* HP. Dr. (Mrs.) Kamla Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

21. Sharma, Ram Chand. *Mahabharat ke Aranyaparvagat kriya-rupon ka bhashik adhyayan.* HP. Dr. (Mrs.) Kamla Devi, Department of Sanskrit, Himachal Pradesh University, Shimla.

22. Sharma, Reeta. *Mudrarakshas ka samalochnatmak adhyayan.* HP. Dr. Virender Kumar Mishra, Department of Sanskrit, Himachal Pradesh University, Shimla.

23. Sharma, Roop Lal. *Nashkamyisidhi ka sameekshatmak adhyayan.* HP. Dr. Nardeo Shastri, Department of Sanskrit, Himachal Pradesh University, Shimla.

24. Sharma, Surender. *Bhavbhuti virachit rupakon mein alankar yojna.* HP. Dr. Prem Lal Thakur, Department of Sanskrit, Himachal Pradesh University, Shimla.

25. Verma, Kanwar Singh. *Mahakavi Bharavi kee alankar yojna.* HP. Dr. Prem Lal Thakur, Department of Sanskrit, Himachal Pradesh University, Shimla.

Punjabi

1. Dhillon, Sharanjit. *Roop Basant qissian da lok yanik adhyayan.* Panjab. Dr. Jagjit Singh, Reader, School of Punjabi Studies, Panjab University, Chandigarh.

2. Jasvinder Kaur. *Harnam Dass Sehrai de Sikh Gur Jiwani navalan da alochnatmak adhyayan.* Panjab. Dr. Atma Singh Hamrahi, Govt. College, Ludhian.

3. Mohinder Singh. *Dr. Ravinder Singh Ravi da alochana sidhant.* Panjab. Dr. O.P. Vashisht, Department of Lexicography, School of Punjabi Studies, Panjab University, Chandigarh.

4. Ranjeet Kaur. *Sohni Mahiwal katha chakkar nal sambandhat chounven. gissian da lakdharak adhyayan.* Panjab Dr. Atma Singh Hamrahi, Govt. College, Ludhiana.

5. Sarb Jit Kaur. *Sohan Singh Sital de novelan wich majhi sabhiachar.* Panjab. Dr. Atma Singh Hamrahi, Govt. College, Ludhiana.

6. Surinder Kaur. *Dr. Gurnam Singh Tir di haas wiang kala.* Panjab. Dr. Atma Singh Hamrahi, Govt. College, Ludhiana.

Hindi

1. Anita Kumari. *Hindi navgeet parampara aur sanrachana.* HP. Dr. O P. Sarswat, Department of Hindi, Himachal Pradesh University, Shimla.

2. Ashith Kumar. *Sur kavya kee samajik evam sahitiyik prasangikta.* HP. Dr. Rajdeo Singh, Department of Hindi Himachal Pradesh University, Shimla.

3. Awasthi, Manohar Lal. *Himachal kee Hindi partrakarita : Swaroop evam sambhavnayan.* HP. Dr. O.P. Sarswat, Department of Hindi, Himachal Pradesh University, Shimla.

4. Baldev Singh. *Hindi ke chhayavadi kaviyon ke kavyadarsh.* HP. Dr. Ram Nath Mehta, Rock House Krisha Kutli, Shimla.

5. Bhardwaj, Arun Dev. *Swatantrayottar upanyason mein mahanagar bodh.* HP. Dr. Kamlesh Gupta, Department of Hindi, Himachal Pradesh University, Evening College, Shimla.

6. Daya Nand. *Kulluvi kahavaten : Ek sanskritik adhyayan.* HP. Dr. (Mrs.) Krishna Raina, Department of Hindi, Himachal Pradesh University, Shimla.

7. Gupta, Harish Kumar. *Agyeya ke sahitya mein darshnik avdharnayen.* HP. Dr. Ram Nath Mehta, Department of Hindi, Himachal Pradesh University, Evening College, Shimla.

8. Hemalatha, T. *A comparative study of the poetry of Ajneya and Ayyappa Panicker.* Kerala. Dr. S. Thankamony Amma, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.

9. Kapil Kant. *Adhunikta ke sandarbh mein Krishna Sobti ka katha sahitya.* Panjab. Prof. M.P. Bhardwaj, Department of Hindi, Panjab University, Chandigarh.

10. Mathur, Mamta. *Gazal parmpara aur adhunik Hindi gazal ka vikas.* Devi Abilya. Dr. Chandra Kiran Agnihotri, Asstt. Prof., Department of Hindi, Govt. P.G. Girls College, Moti tabela, Indore.

11. Negi, Jogindra Singh. *Kabir evam Tulsi ke kavya shilp ka tulnatmak adhyayan.* HP. Dr. Rajdeo Singh, Department of Hindi, Himachal Pradesh University, Shimla.

12. Ramachandran Pillai, R. *A comparative study of the short stories of Premchand and Karoor.* Kerala. Dr. V.P., Muhammed Kunju Metharu, Lecturer, Institute of Correspondence Courses, University of Kerala, Trivandrum.

13. Sasikala Devi, I.S. *Lakshmi Narayan Lal ke natakon per astitvavad ka prabhav.* Kerala. Dr. V.V. Viswam, Prof., Govt. Women's College, Trivandrum.

14. Satish Kumar. *Jaishankar Prasad ke natakon mein manav-mulya.* Panjab. Dr. D P. Maini, Department of Hindi, Panjab University, Chandigarh.

15. Sharma, Birbal. *Kavi Jaishankar Prasad kee rachna prakriya.* Panjab. Prof. D.P. Maini, Department of Hindi, Panjab University, Chandigarh.

16. Sharma, Kusum. *Dhumil kee kavita mein samsamyik samaj ka pratyakhyan.* HP. Dr. Anil Rakeshi, Department, of Hindi, Himachal Pradesh University, Evening College, Shimla.

17. Sharma, Madan Lal. *Shailesh Matiyanti ke katha-sahitya mein vyakti aur samaj.* Panjab. Dr. Yash Gulati, Department of Hindi, Panjab University, Chandigarh.

18. Sharma, Prem Kumari. *Satthotar pramukh Hindi natakon mein vyangya.* HP. Dr. O.P. Sarswat, Department of Hindi, Himachal Pradesh University, Shimla.

19. Sharma, Surekha. *Hindi katha-sahitya mein bal samasya.* HP. Dr. (Mrs.) Krishna Raina, Department of Hindi, Himachal Pradesh University, Shimla.

20. Sharma, Vijay. *Amritlal Nagar aur Yashpal ke upanyason mein chitrit nari patron ka tulnatmak adhyayan.* HP. Dr. Chaman Lal Gupta, Department of Hindi, Himachal Pradesh University, Shimla.

21. Sheela, R.S. *Nagarjun kee rachnaon mein samajik aur rajnaitik samsyaon ka adhyayan.* Kerala. Dr. N. Suresh, Lecturer, Department of Hindi, S.N. College, Quilon.

22. Sheelakumari, R.S. *Jagdish Chaturvedi kee sahitya sadhana : Ek anusheelan.* Kerala. Dr. J. Ramachandran Nair, Prof. M G. College, Trivandrum.

23. Sreeja, S. *Yeshpal kee kahaniyan : Pragati ke vishesh sandarbh mein.* Kerala. Dr. V.V. Viswam, Prof., Govt. Women's College, Trivandrum.

24. Surya Pal. *Jaishankar Prasad ke kavya mein manav mulya.* Panjab. Prof. D.P. Maini, Department of Hindi, Panjab University, Chandigarh.

25. Sushil Kumar. *Agyeya ke katha sahitya mein pashchatya darshan.* HP. Dr. Sarswati Bhalla, Department of Hindi, Himachal Pradesh University, Shimla.

26. Tarsem Lal. *Bhishm Sahni ke natak sahitya ka vishleshanatmak adhyayan : Katheye aur shilpa ke vishesh sandharbh mein.* Panjab. Dr. Virender Mehndiratta, Department of Hindi, Panjab University, Chandigarh.

27. Vasishta, Indira Rani. *Prasad ke itihasik natakon ke mulstrot.* HP. Dr. Rajdeo Singh, Department of Hindi, Himachal Pradesh University, Shimla.

Urdu

1. Jog Raj. *Kashmiri Lal Zakir kee novel nigari : Ek tajziati mutala.* Panjab. Dr. Haroon Ayub, Department of Urdu, Panjab University, Chandigarh.

2. Narang, Mohinder Partap Singh. *Qais Jalandhari kee shakhsiyat aur adab.* Panjab. Dr. Haroon Ayub, Department of Urdu, Panjab University, Chandigarh.

Marathi

1. Ghatugade, Anand Shankar. *Vinoba Bhave yanchya lekhnacha vangmayon abhyas.* Shivaji. Dr. L.R. Nasirabadkar, Department of Marathi, Shivaji University, Kolhapur.

History

1. Walia, Jasbir. *Women and social reform in the districts of Hoshiarpur and Jullundur since annexation 1849-1920.* Panjab. Dr. R.I. Malhotra, Department of History, Panjab University, Chandigarh.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Konar, Satyangsu Sekhar. *Impact of Public Library Legislation on the socio-economic development of West Bengal : A critical study of West Bengal Public Libraries Act, 1979.* Burdwan. Dr. Pulin Barua, Prof., Department of Library and Information Science, University of Burdwan.
2. Paras Nath. *Comparative effectiveness of indexing systems to information needs : A study of four indexing systems.* BHU. Dr. S.N. Singh, Department of Library and Information Science, Banaras Hindu University, Varanasi.

Psychology

1. Mitronen, Irene Kristiansen S. *Nonverbal intelligence and foreign language learning.* Delhi.
2. Nagaraja, M.N. *Development and standardization of the staggered paired word test in Kannada language.* Bangalore. Prof. G.N. Narayana Reddy, Director and Prof, Department of Neuro-Surgery, National Institute of Mental Health and Neuro Sciences, Bangalore.
3. Oza, Nirmala Kantilal. *Marital status, age and job stress as factors in adjustment : A study of working women in banking services.* Patel. Dr. Pramod Kumar, Prof., Department of Psychology, Sardar Patel University, Vallabh Vidyanagar.
4. Seshadri, Prema. *An empirical investigation of motivational processes and executive effectivness.* Bangalore. Dr. G Mohan Kumar, 903, 1st Floor, 18th Main, 5th Block, Rajajinagar, Bangalore.
5. Singh, Mahendra Pratap. *A study of values and styles of coping as related to outcome voriables in public and private enterprises.* BHU. Dr. A.P. Singh, Reader, Department of Psychology, Banaras Hindu University, Varanasi.
6. Singh, Sharmistha. *A study of parental acceptance, rejection in relation to aggression and locus of control in children.* HS Gour. Dr. Y.S. Vagrecha, Department of Psychology, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Sociology

1. Chaturvedi, Vinod. *Jeern vyadhiyon se samajik tanav : Bhagandar evam grahni ke rogion se sambandhit ek samajshastriya adhyayan.* BHU. Dr. S.N. Pathak.
2. Durgamba, Vissa Kanaka. *Correlates of Hysteria : A psycho-social study.* Andhra.
3. Gupta, Rakesh. *Kumaun parvtiya kshetra mein gramin vikas ke sandarbh mein samajik parivartan : Kumaun kshetra ke kuchh pakshon ka samajshastriya vishleshan.* BHU. Prof. S. Tripathi, Department of Sociology, Banaras Hind University, Varanasi.
4. Jain, Madhulika. *Nagareeya parivesh mein Hind parivaron ke badalate pratiman : Varanasi shahar ke Agarwa parivaron per adharit ek samaj vaigyanik adhyayan.* BHU. Dr. A K. Joshi.
5. Mattoo, Anita. *Reform movements and social transformation in India.* BHU. Prof. H.C. Srivastava, Department of Sociology, Banaras Hindu University, Varanasi.
6. Nayak, Shrutiranjan. *Sociology of poverty : A stud of the rickshaw drivers of two Orrissan Cities.* BHU. Dr. Anand Kumar, Lecturer, Department of Sociology, Banara Hindu University, Varanasi.
7. Pandey, Rekha. *Women's place in agrarian social structure : Conditions, constraints and contributions.* BHU. Dr. A.L. Srivastava, Reader, Department of Sociology, Banaras Hindu University, Varanasi.
8. Sahoo, Ramakrishna. *Environmental crisis : A socia perspective.* BHU. Prof. S. Tripathi, Department of Sociology, Banaras Hindu University, Varanasi.
9. Shukla, Bhuvaneshvar. *Shram Bazar per ashrit dainik majdoor: Varanasi Nagar ke das kshetron per adhari shramikon ka samaj vaigyanik adhyayan.* BHU. Dr. Anand Kumar, Lecturer, Department of Sociology, Banaras Hindu University, Varanasi.
10. Tripathi, Neel Kant. *Varanasi ke Bauddha bhikshuon ka ek samajshastriya adhyayan.* BHU. Prof. S. Tripathi, Department of Sociology, Banaras Hindu University, Varanasi.
11. Vyas, S.M. *Levels of social amenities and regiona development of Mewar Region, Rajasthan.* Rajasthan. Dr. S.M. Rizvi, 94, Gandhi Nagar, Bhilwara.
12. Zulqarnain, M. Jawed. *A study of social conditions Intestinal parasites.* AMU. Dr. Jamil Sulaiman Farooqui, Reader, Department of Sociology, Aligarh Muslim University, Aligarh.

Social Anthropology

1. Basu, Indrani. *Kalighat : A traditional religiou centre in Calcutta, its impact upon the social cultural lif among the Bengali Hindus and others in West Bengal.* Calcutta.
2. Mahajan, Anil. *Social anthropological study of Nomadic Artisan community in a matropolitan settin* Karnatak. Dr. K.G. Gurumurthy, Prof., Department of Studie in Anthropology, Karnatak University, Dharwad.

Political Science

1. Agrawal, Vijay Rani. *Rashtriya andolan aur D Bhimrao Ambedkar.* BHU. Dr. H.N. Tripathi, Prof., Depart

nent of Political Science, Banaras Hindu University, Varanasi.

2. Banerjee, Champak Kumar. *Dynamics of West Bengal politics : A study of the changing dimensions of political strategies of the State Congress Party vis-a-vis the Congress High Command 1950-1966.* NBU.

3. Basu, Pradipkumar. *The Communist movement in Tripura, 1935-75.* Calcutta.

4. Brijnath Singh. *Rashtra Mandal aur Bharat : Ek vivechnatmak adhyayan, 1947 se 1985 tak.* Devi Ahilya.

5. Gupta, Damyanti. *The linguistic approach of interpreting political thought with special reference to Quentim Skinner J.G.A. Pecock and John Bunn.* Rajasthan. Prof. V.R. Mehta, Vice-Chancellor, Kota Open University, Kota.

6. Lall, Ajay Livingstone. *Impact of super power rivalry in the Indian Ocean on India's foreign policy.* HS Gour. Dr. R.C. Dube, Head, Department of Political Science and Public Administration, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

7. Rajan. *Gandhi aur rajnaitik chintan.* BHU. Dr. C.K. Padia.

8. Riaz Ahmad. *Communal riots and the press : A study of three riots.* Delhi.

9. Shan Mohammad. *Muslim politics in India, 1900 1919.* D. Litt. AMU.

10. Shukla, Anjani Kumar. *Madhya Pradesh Vidhan Sabha mein anusuchit jati evam anusuchit janjati ke vidhayakon kee bhumika evam rajnitik vyavhar, 1980 se 1985 tak.* Ghasidas. Dr. D.P. Shukla.

11. Singh, Pankaj Kumar. *Nuclear non-proliferation and Third World Threshold Powers.* BHU. Dr. A.S. Mishra.

12. Sinha, Kiran. *Prachin Bharat mein rajdooton kee bhumika.* Ghasidas. Dr. R.N.P. Singh.

13. Srivastava, Padma. *Politics of fragmentation in Manipur.* Delhi.

14. Srivastava, Renu. *India's role in the Nonaligned Conferences with particular reference to New Delhi Summit.* BHU. Dr. A.S. Upadhyay, Reader, Department of Political Science, Banaras Hindu University, Varanasi.

15. Vinod, M.J. *The United States foreign policy towards India : A diagnosis of the American approach.* Bangalore. Dr. R L.M. Patil, Department of Political Science, Bangalore University, Bangalore.

Economics

1. Chakravarti, Dashrthi. *Role of indirect taxes in the developing economy of Madhya Pradesh from 1957-58 to 1984-85.* Devi Ahilya.

2. Chandraiah, Miriyala. *Growth of Bovines and Bovine Feeds, Andhra Pradesh.* Andhra.

3. Damayanthi, D. *Condition of migrants : A study.* Kakatiya. Dr. K. Venkatnarayana, Lecturer, Department of Economics, University Arts and Science College, Warangal.

4. Erragattu Swamy, M. *Indebtedness of agricultural labourers : A case study.* Kakatiya. Dr. N. Linga Murthy, Head, Department of Economics, Kakatiya University, Warangal.

5. Hegde, Dattatraya Anant. *Impact of price behaviour in arecanut plantation and growth in Karnataka : A case study of North Kanara District.* Karnatak. Dr. N.R. Rao. H.No, , Sachidanand Nagar, NGEF Colony, Bangalore.

6. Jacob, Gaddam. *Religious experience : A critical study with reference to Sadhu Sunder Singh.* Andhra.

7. Mathur, Mukesh. *An enquiry into the nature and causes of under utilization of capacity in public sector steel industry of India since 1972-73.* Rajasthan. Dr. M.D. Agarwal Kota Open University, Jain Bhawan, Station Road, Kota.

8. Mishra, Shesh Nath. *The role of fiscal policy in economic development with special reference to India.* BHU. Prof. U.K. Mishra.

9. Mongia, Nandita. *A process analysis of strip mining in Coal Industry for Central Indian Region.* Delhi.

10. Muralidhar Rao, A. *Impact of special employment programmes in rural areas with special reference to Khammam District.* Kakatiya. Prof, P. Ramaiah, Dean, Faculty of Social Sciences and Head, Department of Economics, Andhra Pradesh Open University, Hyderabad.

11. Narayana Reddy, R. *Role of Andhra Pradesh Industrial infrastructure corporation in industrialisation of Andhra Pradesh.* Kakatiya. Dr. (Mrs.) T. Jyothi Rani, Reader. Department of Economics, Kakatiya University, Warangal.

12. Patnaik, Behara Madhukar. *Economic efficiency in agriculture under canal irrigation systems : A case study of Krishna Delta Region, Andhra Pradesh.* Andhra.

13. Rajagopal Reddy, K. *International monetary system and developing countries.* Venkateswara. Dr. B. Raghavulu Naidu, Reader, Department of Economics, Sri Venkateswara University, Tirupati.

14. Ramanjaneyulu, S. *Money supply in India since 1970-71.* Venkateswara. Dr. G. Chandrasekhara Rao Prof., Department of Economics, Sri Venkateswara University Post Graduate Centre, Kavali.

15. Sharma, Ratanlal. *Agricultural reference to Rajasthan Rajya Sehkari Bhoomi Vikas Bank Ltd. Jaipur since 1974.* Rajasthan. Dr. M K. Mast, A-113, Janata Colony Jaipur.

16. Shukla, Shashi Kant. *Sagar Jile kee nagar palikayen. 1975-76 as 1984-85 tak : Ek arthik adhyayan.* HS Gour. Dr. M.L. Tripathi, Department of Economics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

17. Singh, Rajendra Prasad. *Bharat ka arthik vikas : Iske antarrashtriya pahalu.* BHU. Dr. D.K. Mishra, Reader, Department of Economics, Banaras Hindu University, Varanasi.

18. Upadhyaya, Subash Chandra. *Economics of sugarcane cultivation in Radrauna Block, Deoria District, U.P.* BHU. Prof. S.B.L. Gupta, Department of Agricultural Economics, Banaras Hindu University, Varanasi.

19. Veera Venkataiah, K. *The impact of I.R.D.P. on rural poor : A case study.* Kakatiya. Dr. N. Linga Murthy, Head, Department of Economics, Kakatiya University, Warangal.

Law

1. Deka, Nalini Kanta. *A critique of the Assam Land and Revenue Regulation, 1886.* Gauhati. Dr. A. Hussain, Principal, University Law College, Gauhati University, Guwahati.

2. Jag Mohan. *Judicial appraisal in military law and Constitution of India.* Delhi.

3. Tiwari, Jitendra. *Exemptions and deductions in computation of business income under the Income Tax Act, 1961.* BHU. Prof. M.C. Bijawat, School of Law, Banaras Hindu University, Varanasi.

Public Administration

1. Satyanarayana, T. *Family welfare administration : Study of a district in Andhra Pradesh.* Kakatiya. Dr. G. Sreenivas Reddy, Reader, Department of Public Administration, Kakatiya University, Warangal.

2. Venkat Reddy, G. *Discipline problems of State N.G. Os working at Warangal.* Kakatiya. Prof. V. Bhaskara Rao, Department of Public Administration, Kakatiya University, Warangal.

Education

1. Chaudhary, Kamlesh Kumar. *Faizabad Mandal ke gramin madhyamik vidyalayon mein bhugol shikshan : Ek sthiti sarvekshan,* BHU. Dr. R.P. Verma, Prof., Department of Education, Banaras Hindu University, Varanasi.

2. Gulab Singh. *Teacher's perception of scheduled caste students and their scholastic achievement.* BHU. Dr. R.P. Verma, Prof, Department of Education, Banaras Hindu University, Varanasi.

3. Patel, Manjulaben Ramabhai. *An investigation into conservation ability and reading readiness of children in relation to certain psycho-social variables.* Patel. Dr. D.N. Patel, Reader (Retd.), Department of Education, Sardar Patel University, Vallabh Vidyanagar.

4. Saxena, Prem Lata. *Madhya Pradesh ke uchhatar madhyamik vidyalaya ke vyakhyataon kee karya santushti per prabhav dalne vale tatvon ka adhyayan.* Durgavati. Dr. U.C. Kudesia, Prof. and Head, Department of Education Research, Technical Teachers Training Institute, Bhopal.

5. Singh, Anita. *Scientific temperament among post-graduate studies of different religions in India.* BHU. Dr. H.K. Singh, Lecturer, Department of Education, Banaras Hindu Vniversity, Varanasi.

6. Singh, Digvijay. *Developing self-learning material and trying out its efficacy for teaching techniques of teaching to B.Ed students.* BHU. Prof. T. Singh, Reader, Department of Education, Banaras Hindu University, Varanasi.

7. Singh, Sudha. *Effect of simulated teaching on the acquisition and retention of general teaching competence, attitude towards teaching and reduction of anxiety among pupil teachers.* BHU. Dr. T. Singh, Reader, Department of Education, Banaras Hindu University, Varanasi.

8. Singh, Vinod Kumar. *Uttar Pradesh ke Vishwavidyalayon mein prachalit B.Ed. pathyakram kee prasangikata.* BHU. Dr. T. Singh, Reader, Department of Education, Banaras Hindu University, Varanasi.

9. Sudhakar, V. *Dialectics of discovery.* Osmania.

Commerce

1. Bhandari, Kamlesh Kumar D. *Paschim Madhya Pradesh mein adharbhoot sanrachna ke nirman mein kshetriya asantulan.* Devi Ahilya.

2. Chandraiah, G. *Accounting and financial control in primary agricultural co-operative credit societies in Andhra Pradesh, with special reference to Warangal District.* Kakatiya. Dr. G. Krishna Murthy, Head, Department of Commerce and Business Management, Kakatiya University, Warangal.

3. Kazi Shariful Alam. *Tea Industry in Bangladesh : A study of its export marketing strategy.* BHU. Dr. Biswambhar Jha, Lecturer, Department of Commerce, Banaras Hindu University, Varanasi.

4. Kudsia, Jitendra. *Public undertakings in India : A case study of public undertakings of Delhi Administration.* Delhi.

5. Pal, Nityananda. *Bank finance and their recovery problems with special reference to the District of Burdwan.* Burdwan. Prof. Amit Kumar Mallick, Department of Commerce, University of Burdwan, Burdwan.

6. Pandey, Vinod Kumar. *Management and working of U.P. State Handloom Corporation : A case study.* BHU. Dr. A.A. Ansari.

7. Rai, Arvind Kishore. *Industrial relatians in Indian Telephone Industries, Rae Bareli.* BHU. Prof. S.N. Mehrotra, Department of Commerce, Banaras Hindu University, Varanasi.

8. Rameshwar Singh. *Industrial disputes in Rohtas Industries Limited, Dalmianagar.* BHU. Dr. A A. Ansari.

9. Rao, N.S.S. *A.P.S.R.T.C : An appraisal of its working.* BHU. Dr. O.P. Rai, Lecturer, Department of Commerce, Banaras Hindu University, Varanasi.

10. Saibaba, R. *Management of handloom weavers' co-operative societies in Andhra Pradesh : A case study of Warangal District.* Kakatiya. Prof. A. Shankaraiah, Department of Commerce and Business Management, Kakatiya University, Warangal.

11. Singh, Ashok Kumar. *Industrial relations in Bataganj factory of Bata India Ltd. : A case study.* BHU. Prof D.P.N. Singh, Reader, Department of Commerce, Banaras Hindu University, Varanasi.

12. Thakar, Hemant. *Socio-psychological effects on the work motivatian of executives in Durgapur Steel Plant.* BHU. Prof. D.P.N. Singh, Reader, Department of Commerce, Banaras Hindu University, Varanasi.

13. Tiwary, Dinesh Prasad. *Entrepreneurial profile and organisation structure of ancillary industrial units in Uttar Pradesh : A case study.* BHU Dr. Bishwambhar Jha, Lecturer, Department of Commerce, Banaras Hindu University, Varanasi.

14. Uma Devi, D. *Employment relationship in Azam Jahi Mills, Warangal, Andhra Pradesh.* BHU. Prof. D.P.N. Singh, Reader, Department of Commerce, Banaras Hindu University, Varanasi.

Home Science

1. Bagai, Rita, *Adult-child interactions in three communities : Implications for children's growth, cognitive and social development.* Delhi.

Management

1. Malik, Ravinder Kumar. *Human resource accounting and decision behaviour : An empirical study.* Delhi.

RAJENDRA AGRICULTURAL UNIVERSITY : BIHAR

PUSA (SAMASTIPUR)

Advt. No. 1/90

Applications are invited on the prescribed form for the following posts so as to reach the undersigned by **30th April, 1990.** Applications received in the office of the Assistant Director, Recruitment after the date will not be entertained. The application forms alongwith other details, terms and conditions may be had from the Assistant Director, Recruitment, Rajendra Agricultural University, Pusa (Samastipur) Pin Code-848125 personally or by sending self-addressed Envelope of 23x6 c.m. size duly stamped with a postage of Rs. 7.60 (for registered post) for each post separately. However, the forms and details may also be had personally from the Principals, Bihar Veterinary College, Patna, Bihar Agricultural College, Sabour (Bhagalpur) and Tirhut College of Agriculture, Dholi (Muzaffarpur).

Applications with all relevant documents and crossed postal order of Rs. 10/- for general and Rs. 2.50/- for Scheduled Castes/Tribes Candidates payable to the Comptroller, Rajendra Agricultural University, Pusa, Samastipur should be sent separately for each post to the "Assistant Director, Recruitment, Rajendra Agricultural University, Pusa, (Samastipur) - 848125. All applications be sent only through registered post. Applications tendered in any other manner shall be invalid. Application fee sent with the application form shall be non-refundable. The name of the post applied for should be written in Capital letters on the top of the Envelope.

Agriculture Faculty

Pay Scale : Rs. 4500-7300/-

1. Chief Scientist-cum-University Professor, (Plant Breeding, Wheat) B.A.C., Sabour— 1 Post

2. Chief Scientist-cum-University Professor, (Plant Breeding, Rice) B.A.C., Sabour— 1 Post

Qualification : Doctorate Degree in Plant Breeding. Ten years experience of research in Plant Breeding out of which half of the period must have been spent as an Associate Professor/Senior Scientist.

Desirable : Working experience in Wheat Breeding/Rice Breeding as evidenced by published papers in journals of repute.

Senior Scientist-cum-Associate Professor Level posts.

Pay Scale : Rs. 3700-5700/-

1. Senior Scientist-cum-Associate Professor, (Plant Breding) NARP Madhopur —1 Post

(Plant Breeding) Rice, Agwanpur —1 Post

S.R.I., Pusa (Adaptive Research) —1 Post

2. Senior Scientist-cum-Associate Professor, (Horticulture) Regional Research Sub-Station, Munger. —1 Post

3. Senior Scientist-cum-Associate Professor, in Agronomy, NARP, One each at Agwanpur and Jalalgarh —2 Posts

4. Harinagar | Adaptive —2 Posts
Riga | Research —1 Post
Majhaulia | —1 Post

4. Senior Scientist-cum-Associate Professor, Entomology, Honeybee I.C.A.R. Scheme, Pusa. —1 Post

5. Associate Professor-cum-Senior Scientist, Nematology (Temporary) Pusa. —1 Post

6. Associate Professor-cum-Senior Scientist, Forestry, I.C.A.R. for the newly created Department of Forestry. —1 Post

7. Associate Professor-cum-Senior Scientist, Plant Pathology, Non-Plan. —1 Post

8. Associate Professor-cum-Senior Scientist, Entomology, Non-Plan. —1 Post

Qualification

Essential :

(i) Doctorate degree in subjects concerned.

(ii) 7 years experience of Teaching/Research/Extension Education, out of which half of the period must be in the capacity of Assistant Professor and/or Junior Scientist.

Desirable

Published papers in Journals of repute.

1. Specialization during M.Sc. (Ag.) or Ph.D. programme or three years practical experience in (i) Sugarcane breeding for post No. 1 (c); Sugarcane Agronomy for post No. 3 (b); (iii) Honey Bee research for post No. 4, (iv) Forestry or Agro-forestry for post No. 6.

(C) Junior Scientist-cum-Assistant Professor Level Posts

Pay Scale : Rs. 2200-4000/-

1. (i) Junior Scientist-cum-Assistant Professor (Agronomy). One each at Madhopur, Agwanpur, Bhagwanpur, Bikramganj and Sabour under NARP —5 posts

(ii) Assistant Professor-cum-Junior Scientist, Agronomy, R.A.U., Pusa (Non Plan) —3 posts

2. Junior Scientist-cum-Assistant Professor, (Agrostology and Agroforestry under NARP One at Patna in Agrostology and one each at Munger & Madhopur in Agroforestry —3 posts

3. (i) Junior Scientist-cum-Assistant Professor, (Agril. Economics) One post each at Madhopur and Munger under NARP —2 posts

(ii) Cost of Cultivation Scheme, Pusa. I.C.A.R. Scheme —1 post

4. Junior Scientist-cum-Assistant Professor, Horticulture (Olericulture) One post each at Madhopur & Birauli under NARP —2 posts

5. (i) Junior Scientist-cum-Assistant Professor, (Plant Pathology) One post each at Madhopur, Agwanpur, Jalalgarh and Bhagwanpur under NARP —4 posts

(ii) Katihar—I.C.A.R. —1 post

6. Junior Scientist-cum-Assistant Professor, (Entomology) One post each at Bhagwanpur & Bikramganj under NARP —2 posts

7. Junior Scientist-cum-Assistant Professor, in Soil Science or Agril. Chemistry/Sugarcane or Gur-Chemistry at Bihar Agril. College Sabour under NARP —1 post

8. Junior Scientist-cum-Assistant Professor (Agril. Extension Education) at Madhopur under NARP —1 post

9. Junior Scientist-cum-Assistant Professor, (Statistics) at Directorate of Research, Pusa under NARP —1 post

10. Junior Scientist-cum-Assistant Professor (Agril. Engg.) One post each at Bikramganj and Bihar Agril. College, Sabour under NARP —2 posts

11. Assistant Professor-cum-Junior Scientist in Agril Economics, Pusa —1 post

12. Junior Scientist-cum-Assistant Professor, (Plant Breeding) Agwanpur under NARP —1 post

13. Junior Scientist-cum-Assistant Professor, All India Coordinated Research Project, on Parasitic Nematode —1 post

Qualification

General

High 2nd Class Master's degree in subjects concerned. Ph.D. if available will be preferred.

Desirable

1. Specialization at M.Sc. or Ph. D. level in (a) Agrostology at Patna and Agroforestry/forestry at Munger and Madhopur for posts No. 2(b) Production Economics for posts under 3 (i) and (ii); (c) Spices for post No. 4; (d) Jute Pathology for post No. 5 (ii);(e) Sugarcane or Gur Chemistry for post No. 7; (f) Irrigation & drainage for post No. 10 and Forest Economics for post No. 11.

2. Published paper in journals of repute.

Faculty of Veterinary Science & Animal Husbandry

Pay Scale : Rs. 4500-7300/-

A 1. Associate Dean-cum-Principal Bihar Veterinary College, Patna with rent free accommodation. —1 Post (Non-Plan).

Qualification : (i) Doctorate degree in any of the major branch of Veterinary Science and Animal Husbandry.

(ii) 10 years experience of teaching and/or research, out of which five years should have been in a position of responsibility (Professor and Head of the College/University Departments). (Relaxable to a total of six years and three years in the rank of Associate Professor/Senior Scientist in case of candidates having brilliant academic records).

Desirable : (ii) Evidence of leadership outstanding achievement as Head of the Department.

2. Associate Dean-cum-Director, Sanjay Gandhi Institute of Dairy Technology, Patna —1 Post permanent.

Pay Scale : Rs. 4500 - 7300/- plus rent free accommodation.

Qualification : (i) Doctorate degree in any branch of Dairy Science and Technology (Animal Husbandry with specialisation in Dairy Technology).

(ii) Ten years experience of teaching and / or research in the faculty of Dairy Science and Technology/Animal Husbandry out of which five years should have been in a position of responsibility (Professor and Head of the College/University departments). (Relaxable to total of six years and three years in the rank of Associate Professor/Senior Scientist in case of candidates having brilliant academic records).

Desirable : (i) Good research experience and leadership as evidenced by published papers in journals of repute in the field of specialisation.

Associate Professor-cum-Senior Scientist Level Posts

Pay Scale : Rs. 3700-5700/-

1. Associate Professor-cum-Senior Scientist, Dairy Technology S.G.I.D.T., Patna —1 Post Temporary

2. Senior Scientist-cum-Associate Professor, Animal Production A.P.R.I., Pusa —1 Post (Non-Plan).

3. Senior Scientist-cum-Associate Professor, Animal Nutrition NARP —1 Post

Qualification : Doctorate degree in Dairy Technology for Post No. 1, Animal Production Physiology/Animal Breeding/Animal Reproduction for Post No. 2 and Animal Nutrition for Post No. 3.

(ii) Seven years experience of Teaching/Research/Extension Education, out of which half of the period must be in the capacity of Assistant Professor and / or Junior Scientist.

Desirable : Published papers in journals of repute.

Junior Scientist-cum-Assistant Professor Level Posts

Pay Scale : Rs. 2200-4000/-

1. Junior Scientist-cum-Assistant Professor, Animal Nutrition A.P.R.I., Pusa, Non-Plan. —1 Post

2. Junior Scientist-cum-Assistant Professor, Poultry Production A.P.R.I., Pusa Non-Plan. —1 Post

3. Junior Scientist-cum-Assistant Professor, Animal Nutrition at Madhopur (NARP). —1 Post

Qualification

High Second Class Master's degree in the subject concerned, with specialisation in Animal Nutrition for Post No. 1, Poultry Production for Post No. 2 and Animal Nutrition for Post No. 3.

Faculty of Basic Science and Humanities

Pay Scale : Rs. 4500-7300/-

University Professor-cum-Chief Scientist, Botany and Plant Physiology (Non-Plan) —1 Post

Qualification : General

Doctorate degree in Botany and Plant Physiology.

(ii) **Experience** : Ten (10) years experience of teaching and/or Research out of which half of the period must be in the capacity of Associate Professor/Senior Scientist.

(iii) Good Research experience as evidenced by published papers in journals of repute.

Associate Professor Level Posts

Pay Scale : Rs. 3700-5700/-

(i) Associate Professor-cum Senior Scientist, Microbiology, Non-Plan —1 Post

(ii) Associate Professor-cum-Senior Scientist, Statistics, Non-Plan. —1 Post

Qualification : (i) Doctorate degree in subject concerned.

(ii) Seven years experience of Teaching and/or Research/Extension Education. Out of which half of the period must be in the capacity of an Assistant Professor-cum-Junior Scientist.

Assistant Professor Level Posts

Pay Scale : Rs. 2200-4000/-

(i) Assistant Professor-cum-Junior Scientist, Mathematics. Non-Plan —1 Post.

(ii) Assistant Professor-cum-Junior Scientist, Bio-Chemistry Non-Plan —2 Posts

Qualification : General :

High Second Class Master's degree in the subject concerned.

(ii) Ph D. if available, will be preferred.

Sanjay Gandhi Institute of Dairy Technology, Patna

University Professor Level Posts.

Scale : Rs. 4500-7300/-

(i) University Professor Dairy Engineering —1 Post Temporary.

(ii) University Professor Dairy Microbiology —1 Post Temporary

(iii) University Professor Dairy Chemistry —1 Post Temporary.

Qualification : Doctorate degree in the subject concerned. High Second Class Master's degree in the subject concerned, will be essential qualification, if persons holding doctorate degree are not available.

Experience : Ten years experience of teaching and/or research out of which half of the period must be in the capacity of Associate Professor/Senior Scientist.

Desirable : Good research experience and leadership as evidenced by published papers in journals of repute in the field of specialisation.

Associate Professor Level Posts

Scale : Rs. 3700-5700/-

(i) Associate Professor Dairy Engineering —Post Temporary

(ii) Associate Professor Dairy Economics —1 Post Temporary

(iii) Associate Professor Dairy Microbiology —1 Post Temporary

(iv) Associate Professor Dairy Economics —1 Post Temporary

(v) Associate Professor Dairy Extension —1 Post Temporary.

Qualification (i) Doctorate degree in the subject concerned. High Second class Master's degree in the subject concerned will be essential qualification, if persons holding doctorate degree are not available.

(ii) Seven years experience of teaching and/or research/extension out of which half of the period must be in the capacity of an Assistant Professor/Junior Scientist in the required area of specialisation.

Assistant Professor Level Posts :

Pay Scale : Rs. 2200-4000/-

(i) Assistant Professor, Statistics —1 Post Temporary.

Qualification : (i) High Second class Master's degree in the subject concerned.

(ii) Ph. D. if available, will be preferred.

Faculty of Agriculture Engineering

A. Associate Professor-cum-Senior Scientist Level Posts

Pay Scale : Rs. 3700-5700/-

1. Associate Professor-cum-Senior Scientists, Farm Machinery, (Plan) —1 Post

2. Associate Professor-cum-Senior Scientist, Irrigation & Drainage Engineering (Plan). —1 Post.

3. Associate Professor-cum-Senior Scientists, Soil Conservation & Engineering (Plan) —1 Post.

Qualification : (i) Doctorate degree in the subject concerned. High Second Class Master's degree in the subject concerned will be essential qualification. if persons holding doctorate degree are not available.

(ii) Seven years experience of teaching and/or research/Extension Education out of which half of the period must be in the capacity of an Assistant Professor/Junior Scientist in the required area of specialisation.

B. Assistant Professor-cum-Junior Scientist Level Posts

Pay Scale : Rs. 2200-4000/-

1. Assistant Professor-cum-Junior Scientists, Farm Power (Plan) —1 Post

2. Assistant Professor-cum-Junior Scientists, Irrigation & Drainage (Plan) —1 Post

Qualification : High Second class Master's degree in the subject concerned, with specialisation in Farm Power for post no. 1 and Irrigation and Drainage Engineering for the Post no. 2.

Directorate of Extension Education

I. Pay Scale : Rs. 3700-5700/-

1. Project Officer Operational Research Project for Kosi Embankment Area, Supaul —1 Post
2. Training Organisor, Biogas, Pusa —1 Post
3. Senior Scientist-cum - Associate Professor, Operational Research Project on Scheduled Caste (Extension Education) — 1 Post

Qualification : General :

(i) Ph.D. in Agronomy for post no. 1.

Ph.D. in Extension for post no. 2.

(ii) 7 years experience of Teaching/Research/Extension Education, out of which half of the period must be in the capacity of Assistant Professor and/or Junior Scientist.

II. Assistant Professor - cum-Junior Scientist Level Posts (I.C.A.R. Scheme)

Pay Scale : 2200-4000/-

1. Training Associate (Home Science) K.V.K., Munger —1 Post

K.V.K. Banka —1 Post

2. Training Associate (Animal Science)

K.V.K., Munger —1 Post

K.V.K., Agwanpur —1 Post

3. Subject matter specialist (Agril Engg.) National Demonstration Programme Gaya —1 Post

National Demonstration Programme, Vaishali —1 Post

4. Junior Scientist (Agril. Engg.) O.R.P. for Binda Diara —1 Post

Qualification : General :

(i) High 2nd Class Master's degree in subject concerned.

(ii) Ph.D. if available will be preferred.

III. Technical Supervisor, Fisheries —1 Post

Pay Scale : Rs. 1600-50-2300-60-2780/-

Qualification : B.Sc. Fisheries Science.

IV. Technical Supervisor,
Biogas, Pusa. —1 Post

Qualification : Diploma in Mechanical Engineering/Degree in Agriculture Engineering.

Miscellaneous Posts

1. Workshop Manager/Superintendent (Temporary) Pusa —1 Post

Pay Scale : Rs. 2000-3800 (Revised)

Qualification : B Sc./B. Technology in Automobile Engineering/Mechanical Engineering / Agriculture Engineering, Preferably with experience in repair and maintenance of Automobile and farm machines. If B. Technology or B.Sc. not available, persons having Diploma in Automobile Engineering / Mechanical Engineering with experience of managing and maintenance of workshop of Automobiles and Farm Machines would also be considered.

2. Deputy Controller

Pay Scale: Rs. : 2400-75-2850-100-4150 (Revised)

Qualification

(a) Graduate in Commerce / Arts/ Science or equivalent degree.

(b) Experience as Chartered Accountant or Cost and Works Accountant or should have passed subordinate accounts service examination of any State or Central Government or an equivalent or higher examination and have had an experience of service in higher post under Government or Quasi Government. Organisation or University for a minimum period of 7 years.

3. Deputy Registrar

Pay Scale : Rs. 3700-5700/-

Assistant Registrar

Pay Scale : Rs. 2200-4000/-

Qualification

(i) A degree in Agriculture/Animal Husbandry or in a related field with atleast five years of administrative or academic experience.

(ii) Persons with Postgraduate degree in any field of specialisation in Agriculture/Animal Husbandry and allied Sciences shall be given preference.

(iii) A good knowledge of the educational systems prevalent in the country/world.

(iv) Administrative experience in a University organisation shall be preferential qualification.

TERMS AND CONDITIONS

1. Specialisation means that person concerned has submitted thesis and or has teaching and/or research experience in the field concerned.

2. Number of vacancies as indicated above may increase or decrease as per need and discretion of the University.

3. Post of Junior Scientist-cum-Asstt. Professor / Asstt. Professor-cum-Junior Scientist are reserved for S.C./S.T. / B.C.I. & Woman Candidates. However, if such suitable candidates are not available then the position may be filled up by the Candidates of unreserved category.

4. The University reserves the right to withdraw any post, to change the designation, qualification, pay scale and also not to fill up any post even after Selection. No correspondence will be entertained in this regard.

5. Candidates employed in Govt. Department / Public Sector Undertakings / Autonomous Bodies or elsewhere must sumit their application through proper channel. If advance copy is submitted in that case, he must bring 'No objection certificate' with him at the time of interview, otherwise his/her candidature will not be considered.

6. Convassing in any form and/or bringing in any influence will be treated as disqualification and will debar the candidates for consideration even for interview.

7. High starting salary may be admissible to highly qualified persons on the recommendation of Selection Committee in special case.

8. The services of the candidates appointed against the post in I.C.A.R. Schemes is liable to be terminated with the lapse of the I.C.A.R. Scheme or the incumbent may be reverted to the lower post held previously, if any.

9. The period of experience is relaxable to a total of 6 years and 3 years in the capacity of Associate Professor / Senior Scientist for University Professor level posts and 4 years and 2 years for Associate Professor level posts for candidates coming under brilliant categories which means that throughout their career starting from matriculation onwards they may only one second class and the rest first class degrees.

R.C. Sinha
ASSTT. DIRECTOR (Rectt.)

KENDRIYA HINDI SANSTHAN,
AGRA

Advertisement No. 1/90

Applications are invited from Indian citizens at the Kendriya Hindi Sansthan for the posts of (1) Research Assistant/ Evaluator (Applied Linguistics) (One clear vacancy and three leave vacancy) (2) (Hindi Literature) (one post) (3) (Education) (One post Reserved for S T. S C. can also apply) will be treated as unreserved if eligible candidates are not available.

Pay Scale : Rs. 1640-2900 plus all allowances admissible to Central Govt. Employees.

Qualifications: Essential (1) Post : (1) Consistently good academic records with Ist or 2nd class (B+) Master's degree in Hindi Linguistics. **Post (2)** Consistently good academic record with 1st or 2nd class (B+) Master's degree in Hindi Literature. **Post (3)** Consistently good academic record with 1st or 2nd class (B+) Master's degree in Education.

Essential (2) Post (1) Training in Linguistics/Applied Linguistics for those who hold Master's degree in Hindi and Hindi upto Bachelor's level for those having Master's degree in Linguistics/Applied Linguistics **Post (2) and (3)** Training in Linguistics/Applied Linguistics Essential No. 3 **Post (3)** Hindi upto Bachelor's level.

Desirable Posts 1 to 3 : Experience in teaching of Hindi as second or Foreign language/in Hindi Teachers Training in production of Instructional materials in Hindi.

For application forms and other particulars write to Director KHS, Hindi Sansthan Marg, Agra-282005 with Rs. 1 80 paise stamped self-addressed envelope (23 x 10 .Cm.) giving serial number and name of post or obtain from counter during working days (11 00 A M to 5.00 P.M.). Separate application should be sent for each post. Selected candidates can be posted at Shillong / Guwahati / Hyderabad/ Mysore/Delhi/Agra or at any other campus/centre established in future. Closing date for receipt of applications in Agra office 30-4-1990. For applicants from abroad extension of 15 days for clossing date.

INSTITUTE OF ENGINEERING & TECHNOLOGY

SITAPUR ROAD, LUCKNOW-226020

Advertisement No. 2/90

Applications are invited from citizens of India for the following positions at this Institute in the prescribed forms obtainable free of charge from the Deputy Registrar of the Institute on request accompanied by a self addressed stamped (Rs. 1.80) envelope (25 x 10 cms).

Sl. No.	Name of the post	No. of Post	Scale New new grade	Qualification and experience
1.	**Computor Operator** (Those who applied in response to earlier advertisement need not apply again).	1	Rs. 1400-2600	B.Sc. with Maths. Physics and good knowledge of Computer Operations. Or Diploma in Electronics and good knowledge of operating the Computer system.
2.	**Accountant**	1	Rs. 1400-2600	DTE Or M. Com (B. Com. in Accountancy).
3.	**Instructor/Foreman** (one each in Civil Engineering, Electronics Engg. and Computer Sc.)	3	Rs. 1400-2600	First class B.Sc./ Diploma + 5 years experience.
4.	**Mechanic Grade 'A'**	4	Rs. 1200-2040	High School, Diploma/ Certificate and 2/5 years experience in different workshop trades.
5.	**Junior Noter Drafter**	1	Rs. 975-1660	Intermediate and + 5 years experience.
6.	**Punch Operator** (Those who applied in response to earlier advertisement, need not apply again).	2	Rs. 950-1500	Intermediate and training in Key Punching.
7.	**Mechanic Grade 'B'**	2	Rs. 950-1500	ITI certificate and 2 years experience.
8.	**Routine Grade Clerk/ Typist.** (Those who applied in response to earlier advertisement need not apply again.)	2	Rs. 950-1500	Intermediate with minimum speed of 30 in English typing and 25 w.p.m. in Hindi

Preference will be given to higher qualification and relevant experience.

Post carry allowances and other benefits as approved by the U P. State Government from time to time. Depending on qualification and experience a higher start may be offered.

Number of posts can be increased, decreased or withdrawn at the discretion of the Institute Authority.

In case of exceptionally experience/qualified candidates relexation in the essential requirement could be considered by the Institute.

Applications on prescribed form should reach the Director, Institute of Engineering and Technology, Sitapur Road, Lucknow-226020 by 5.00 P.M. on 16th April, 1990.

Anil Kumar Saxena
DEPUTY REGISTRAR

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VICTORIA JUBILEE TECHNICAL INSTITUTE

MATUNGA, BOMBAY-400 019

Adv/1/1990—Degree

Vacant Posts (Degree Staff)

PROFESSORS

1. (a) Electronics Engineering—2 posts (One Reserved for SC/ST or NT & DT)*
   (b) Electronics Engg. P.G.—1 post (Reserved for SC/ST or NT & DT).*
2. Computer Engineering—2 posts (One Reserved for SC/ST or NT & DT)*
3. Computer Application – 1 post (Reserved for SC/ST or NT & DT)***
4. Civil Engineering—1 post (Reserved for SC/ST or NT & DT)*

ASSISTANT PROFESSORS

5. Mechanical Engineering—1 post (Temp) (Reserved for SC/ST or NT & DT)*
6. Electrical Engineering — 1 post (Reserved for SC/ST or NT & DT)***
7. Electronics Engineering — 3 posts (Two posts reserved for SC/ST or NT & DT)*
8. Industrial Engineering — 1 post (Reserved for SC/ST or NT & DT)*** (P.G.)
9. Computer Engineering — 3 posts (Two posts reserved for SC/ST or NT & DT)
10. Computer Application—1 post
11. Technical Chemistry (Paint Technology) — 1 post (Reserved for SC/ST or NT & DT)***
12. Production Engg. — 1 post (Reserved for SC/ST or NT & DT)*

LECTURERS

13. Mechanical Engineering — 1 post (Reserved for SC/ST or NT & DT)****
14. Mechanical Engineering (Material Technology) — 1 post
15. Electrical Engineering — 3 posts (Reserved for SC/ST or NT & DT) ****(2) ***(1)
16. Civil Engineering—1 post
17. Geology—1 post (Reserved for SC/ST or NT & DT)*
18. Computer Engineering — 5 posts (Three posts reserved for SC/ST or NT & DT)***(1) *(2)

19. Computer Application — 2 posts (One reserved for SC/ST or NT & DT)
20. Structural Engineering — 1 post (Reserved for SC/ST or NT & DT)****
21. Lecturer in Textile Technology—1 post (Reserved for SC/ST or NT & DT)*
22. Lecturer-cum-Asst. W/Shop Supdt. (Wvg.) Text. Deptt.—1 post (Reserved for SC/ST or NT & DT)****
23. Lecturer in Textile Physics—1 post (Text. Mfgrs. Deptt.)
24. Lecturer in Tech. Chem. (for P.G. FDC) —2 posts (Reserved for SC/ST or NT & DT)
25. Lecturer in Chemistry (Non-Technical)— 3 posts (One reserved for SC/ST or NT & DT)****
26. Production Engineering — 1 post (Reserved for SC/ST or NT & DT)

* First Advertisement
** Second Advertisement
*** Third Advertisement
**** Fourth Advertisement

Posts reserved for backward class candidates are interchangeable among the different categories of the backward classes, viz. SC/ST or NT & DT.

Scales of Pay (Likely to be revised shortly)

Professors : Rs. 1500-60-1800-100-2000-125/2-2500
Assistant Professors : Rs. 1200-50-1300-60-1900
Lecturers (Technical): Rs. 700-40-1100 50-1600
Lecturer (Non-Technical) : Rs. 700-40-1100-50-1300 Assessment-50-1600

Gross Emoluments (un revised)

Position	At the minimum of the scale	At the maximum of the scale
Professor	Rs. 4824.50	Rs. 7338.00
Assistant Professor	Rs. 4382.50	Rs. 5857.00
Lecturer	Rs. 2964.00	Rs. 5049.00
Lecturer-cum-Asstt. Workshop Supdt.	Rs. 2964.00	Rs. 5049.00

Capable and motivated candidates will have adequate opportunities for teaching at Post-graduate level, conducting research and getting associated with Industry sponsored projects and consultancy work,

Applicants who are already employed shall send their applications through proper channel.

Break in academic career if any, should be accounted for.

Qualifications for various posts are as prescribed by the University of Bombay.

Details regarding qualifications etc. and the application forms are obtainable from the Office of the Principal & Secretary on request with self-addressed envelope (10 cm x 2cm.) stamped Rs. 3/-.

Applications in the prescribed form complete in all respects, must reach VJTI on or before 9th April, 1990.

MINISTRY OF DEFENCE

Defence Research and Development Organisation (DRDO)

ADDENDUM

Reference Advt. No. davp 89/1194 addendum appeared in this paper on **March 19, 1990** regarding post of Scientists 'C' the following Addendum may be noted.

ADDENDUM

Add the following posts of Scientist 'C'

Centre for Artificial Intelligence & Robotics, Bangalore

Item No. 35 C ; 1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Electrical/Electronics Engineering from a recognised university or equivalent. (ii) Four years research/design/development experience in the area of computer vision/image processing. **Desirable Qualifications** : Master's degree in Electrical/Electronics Engineering.

NPOL, COCHIN

Item No. 35 D : 1 Post

Essential Qualifications : (i) At least second class Bachelor's degree in Rubber Technology/High Polymer Engineering/Chemical Engineering from a recognised university or equivalent. (ii) Four years research and development experience in the area of polymer processing and fabrication/aging formulation of polymer systems for specific and properties. **Desirable Qualifications** : (i) Post Graduate/Doctoral degree in related fields of Polymer Engineering/Rubber Technology. (ii) Experience in organising and managing research projects.

The last date of receipt of applications for the above posts of Scientist 'C' (Item No. 35C & 35D) is extended to 10th April, 1990. In respect of candidates from Andaman & Nicobar Island, Lakshadweep and Abroad, the last date of receipt of applications will be 24th April 90. Crucial date for determining age of candidates for these posts will be 10th April, 1990. Other general conditions given in Advt. No. 023/RAC/90 remain unaltered.

davp 89/1227

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University News

MONDAY, APRIL 2, 1990 Rs. 2.50

S.V. Chittibabu, former Vice-Chancellor of Madurai Kamaraj and Annamalai Universities and former President, AI delivering the Convocation Address at the Sixth Convocation of the Amravati University.

ASSAM AGRICULTURAL UNIVERSITY

ADMISSION NOTICE NO. I/1990

Applications in prescribed forms are invited for admission into the following degree programmes of the University in the Faculty of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati-781 022 under course credit system for the session 1990-91 commencing from 30th July, 1990.

(A) M.V.Sc. Programme

1. Extension Education
2. Veterinary Pharmacology & Toxicology

(B) M.V.Sc. and Ph.D. Programmes in the Disciplines

1. Animal Genetics and Breeding
2. Animal Nutrition
3. Animal Production and Management
4. Veterinary Anatomy & Histology
5. Veterinary Gynaecology, Obst. & A I.
6. Veterinary Medicine, Public Health & Hygiene
7. Veterinary Microbiology
8. Veterinary Parasitology
9. Veterinary Pathology
10. Veterinary Physiology
11. Veterinary Surgery & Radiology

MINIMUM QUALIFICATION FOR ADMISSION

(A) M.V.Sc. Degree Programme : A candidate must have passed the B.V.Sc. & A.H. degree examination of this University or any other University recognised by this University securing minimum OGPA of 2.60 in 4.00 scale or 6.70 in 10.00 scale or its equivalent or minimum of 50% marks in aggregate (traditional system) in the qualifying examination(s). This requirement is however, relaxable to an OGPA of 2.50/6.50 or 45% marks in the case of SC/ST candidates and for candidates having atleast 2 years of professional experience provided further that the minimum OGPA may be relaxed for candidates who are deputed from the State Govt. of Assam and who have at least five years of service experience after obtaining B.V.Sc & A.H. degree which shall either be an OGPA of 2.30 in 4.00 or 6.30 in 10.00 scale or 42% marks in aggregate (traditional system) in the B.V.Sc. & A.H. examination.

(B) Ph.D. Degree Programme : A candidate must have passed the M.V.Sc. degree examination of this University or any other University recognised by this University with basic degree of B.V.Sc. & A.H. with a minimum OGPA of 3.00 in 4.00 scale or 7.00 in 10.00 scale or 55% marks in aggregate under traditional system in the M.V.Sc. examination. This requirement is, however, relaxable to an OGPA of 2.85 in 4.00 scale or 6.85 in 10.00 scale or 50% marks in aggregate under traditional system for the deputed candidates having 5 years of service experience after obtaining Master's Degree.

How to Apply : Prescribed application forms may be obtained from the office of the Director of Post Graduate Studies, Assam Agril. University, Khanapara, Guwahati-781 022 on payment of Rs. 20.00 (Rupees twenty) only in terms of crossed Indian Postal Order drawn in favour of the Director of Post Graduate Studies, Assam Agricultural University, Khanapara, Guwahati-781 022, either personally or by sending a self-addressed stamped envelope of size 10 x 22 cm. affixing postal stamp of Rs. 1.50 (Rupees one & paisa fifty) only.

Last Date of Receipt of Application : Applications complete in all respect must reach the Director of Post Graduate Studies, Assam Agricultural University, Khanapara, Guwahati-781 022 on or before **31st May, 1990**. Candidates who are employees of the State Govt. or any other organisation must apply through proper channel.

RESERVATION

M.V.Sc. Programme : 80% of seats are reserved for candidates belonging to the State of Assam by domicile, 10% seats for ICAR nominees and 10% for candidates of N.E States.

Ph.D. Programme : Out of four seats earmarked for each Department, two are reserved for AAU candidates (fresh or sponsored) and two for candidates sponsored by State Government of Assam/ICAR.

Interview : Candidates shall have to appear before the Selection Committee as and when called for at their own expenses. Selection will be done on the basis of performance in the interview and academic records, and the decision of the Selection Committee will be final. Selected candidates who are employees of the State Governments or any other organisation shall have to furnish a copy of the order of deputation/or release from Government/Employers at the time of admission.

In connection with Ph.D. degree Programme, the University reserves the right to refuse admission in subject(s) in case there is shortage of qualified teachers in the concerned department at the time of admission.

Application for admission into the University Hostel which is subject to availability of seats shall have to be made in separate prescribed forms.

REGISTRAR

C. F. T. R. I.

UNIVERSITY NEWS

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Higher Education in AD 2000

Amrik Singh*

How is it that a large number of persons, including a very high proportion of those who are engaged in teaching, do not look upon education as being central to the well-being of the society ? In fact, my feeling of bafflement at this situation becomes greater when I look at the contrasting attitudes of those in the middle class to which I also belong. For themselves they want the best of education. Not only that, they want it as cheap as possible. But when it comes to others they apply a different yardstick.

This is only a way of saying that one of our first priorities when we became self-governing in 1947 should have to provide elementary education to everyone. In theory we agreed to do so by setting a definite date for this purpose; the only instance of its kind in the Constitution. In practice, however, we had no intention of keeping this commitment. Let me be specific at this stage.

When the Second Five Year Plan was being drawn up, one of the nominated members of the Rajya Sabha was Dr. Zakir Hussain. As the document came up for discussion, he pointed out in no uncertain terms that adequate provision for the spread of elementary education to which the country was committed had not been made. But then his was a minority voice and no one paid much heed to what he said. What has happened subsequently is known to everyone and it should not be necessary to repeat it.

The plain fact is that we adopted a strategy of development which more through an act of omission than of commission gave a low priority to elementary education. It was somewhere in the middle or the end of the 50s that a kind of unstated decision was taken to concentrate on primary education and seek to cope with the problem of illiteracy through its gradual spread. The results are there for us to see. By the end of the century, half the illiterates of the world would be found in India.

That apart, by neglecting elementary education we have also neglected to take care of the menace of our booming population. In a sense the two are so closely interlinked that if more and more people are beginning to see the folly of our having neglected elementary education it is not because they are persuaded of the inequities perpetuated but because it is becoming increasingly clear to them that the population problem can never be solved unless elementary education becomes universal; and women are covered by it as much as men.

As of today, approximately four per cent of the relevant age group manages to join a college or a university. Evidently, the age group we are talking of has to be determined in relation to those who have already completed school education. We know that not even 10 per cent of the relevant age group manage to complete 12 years of schooling out of those who join.

**Former Secretary, Association of Indian Universities, 2/26 Sarva Priya Vihar, New Delhi-110016.*

Out of those who finish school, around 10 per cent enter college and it is this number which constitutes four per cent of the relevant age group of the total population. Where this figure to go up four or five times (for that is what universalisation of democracy education should mean) all that we have to do is to multiply the corresponding figure entering the college and university sector by as many times. In that case our student population at the higher education level would be somewhere between 20 and 30 million.

Should that come to pass, it would be probably the largest university system in the world. In the late 60s and the early 70s the Americans started using the phrase 'mass higher education'. During those years, around 50 per cent of the relevant age group were enrolled either in a college or a university. Since then the proportion has come down and today it is around one-third of the relevant age group rather than one half or so, as it was at one time. The fact, however, remains that the phrase 'mass higher education' was coined in a particular context and not unfairly.

It cannot be said that parallel developments took place in some of the other developed countries. In no country, either in Europe or elsewhere including Japan, did the proportion of students entering higher education go as high as it did in the US. Nontheless, striking advances in the enrolment of students at that level have been made in a number of countries including some of those not even mentioned above. What I wish to suggest here is that enrolment in the system of higher education has a good deal to do with three things : (a) the Gross National Product, (b) the health and diversification of the economy, and (c) the extent to which education is universal or somewhere short of that. All these factors combined in a favourable and fertile way in the US at a given stage of development. Since then things have changed and the US is no longer the economic power that it was at one time.

Some of the other countries have meanwhile surged forward and corresponding changes have taken place in those countries. Notably in Germany and Japan. To describe what is happening in those countries and a few others however as mass higher education would be to stretch the point. Higher education has certainly become much more accessible o young people in those countries than it was at one ime. And that, if I may venture to say, is, what is likely to happen as more and more countries join the league of developed countries.

II

And this brings me to our own country. Ours is, as they say, a developing country. This is only a polite way of saying that we have yet to develop. Put harshly, it can also be said that we are underdeveloped. These somewhat bewildering nomenclatures should not excite us in any way. The ugly truth, as described above, is that more than 50 per cent of our people are illiterate. Literacy and development go together and no country can aspire to development unless, at the same time, those who run the country make sure that everybody becomes literate. In other words, while elementary education is important, adult education is no less important.

But I do not wish to go into these issues other than to call attention to two facts. One is the extraordinary growth of the middle class in India during the last four decades and the second is the close linkage between higher education and the needs and preferences of the middle class.

While during these four decades, quite a proportion of those who belong to the weaker sections of the society have got drawn into the circuit of higher education and most of these people have been co-opted into the middle class, the fact remains that higher education is not as accessible to everyone as is claimed. This may be disputed by some people.

Without entering into an argument with them, I would like to say that for the most part those who survive 12 years of schooling do certainly manage to enter the portals of higher education. But what about the unconscionably high casualty rate at the early stages of education ? As is widely known, the dropout rate at the primary level is around 60 per cent. Another 30 per cent drop by the wayside in the course of changing tracks from the primary to the lower secondary and then to secondary and the higher secondary stages. Only about 10 per cent of those who join school as children manage to survive this obstacle race called education.

No wonder, even if we choose to work out an estimate of the strength of the middle class, the most liberal estimate comes to approximately 50 million. Personally I find it on the higher side. But even if this estimate be correct, 50 out of 800 million comes to about six per cent of the total population. That this rate of progress is the outcome of four decades of planning should indicate unambiguously that our strategy of planning is in need of a drastic change. My own view is that we are on the brink of such a change. Whether it takes a few years or more than a decade or longer is difficult to estimate. The existing strategy of development is ceasing to be productive and it would, therefore, have to be changed.

What is happening in our country is something like this. The strategy of development followed so far has helped the middle class to grow but the rest of the population either stays where it was or is in the process of getting urbanised and drawn into the organised sector. Anyone who knows anything about nineteenth century India would immediately recognise that the parameters of development at the end of the 20th century are more or less the same as were projected in the beginning of the 19th century.

During British days we had no hesitation in describing the system as the colonisation of India. Since 1947 we have ceased to be a colony. However, not many of us are prepared to recognise that the parameters of development have not changed in any fundamental way and what we are witnessing is almost an extension of the same kind of thing. In other words, colonisation has returned under a new guise but we hesitate to describe is even as neo-colonialism.

If we go back to the middle of the 19th century when universities were established, we can recall in some detail how those passed out got absorbed into the administrative structure that the British had set up by then. In course of time the system began to expand. In order to enter it, one had to go through college or university and qualify for entry into the charmed circle of bureaucracy and related areas. A large number of Englishmen manned those posts. Step by step the process of replacement got underway. It should not be necessary to provide further details of how all this happened except to make the point that the number of those who passed out was invariably larger than the number of openings available to them.

Nontheless, the process continued without any further interruption and the first real setback was encountered after World War I. Further linear progress was not possible. When the slump of 1929 came, there was a further setback and it was around that time that the problem of educated unemployment came to be recognised as a serious problem.

Since 1947 the situation has undergone a marked change. But it is not a qualitative change. A good deal of expansion of industry, trade and such other activities has taken place. This is what has led to the undoubted proliferation of the middle class. Since the 70's however, the rate of expansion has not kept pace with increase in the number of those entering the labour market.

Roughly speaking, ten million people enter the labour market but the number of jobs created every year is approximately half a million. This refers to the pool of labour as a whole. A certain proportion of them, however, belong to the educated middle class. And they too find it difficult to get employment easily or readily. In consequence the situation in regard to the generation of jobs and employment continues to be difficult.

How does all this affect the sector of higher education ? Mainly in two ways. One is the unmistakeable preference of those in the middle class for middle class jobs. Secondly, since jobs are not available in the requisite number there are problems. What is known as 'baby sitting' is a phenomenon that is closely related to this particular aspect of the situation. Since everybody who passes out cannot find a job, one minor way of coping with the problem is to keep more and more of them engaged in educational activity which gives them the illusion of being usefully occupied without creating a problem for any one.

Approximately 10 per cent of those who finish the +2 stage join college. While a small proportion of them are certainly interested in a professional or some other kind of career, the large majority who join college find that there is nothing else that they can do. The family can afford to keep them in college and the state finds in a rewarding form of investment to keep them engaged so that they do not get into mischief.

There is a good deal more to be said in this regard but it should not be necessary to do so for two reasons. One, the phenomenon is well-known and well-recognised. Secondly, it is a part of the strategy of development to invest some resources which may not be academically productive. The social returns from this investment are not inconsiderable but that is what has kept the system going.

Was it necessary to have gone into these details ? Should such a question be asked, it cannot be brushed aside. The only proper answer to make is that it was necessary to delineate the outlines of the existing situation so as to raise the related logical questions. Briefly these might be listed as follows :

(a) What kind of relationship will exist as between the lower levels of education and higher education ?

(b) What kind of relationship should exist as between the +2 level and higher education ?

(c) What kind of diversification should exist at the higher secondary level so that what is called higher education in the proper sense of the word is not only a continuation of what is done at the school level. Put another way, how do we visualise the range and ambit of what is called the First Degree ?

(d) What should be the relationship between the first degree and the post-graduate degree and furthermore between the first research degree and the higher research degree generally known as the Ph.D. degree ?

(e) What about the pursuit of excellence ? And what about the pursuit of creativity ?

(f) Finally, what about issues like access to higher education, equalisation of educational opportunities, the source of funding for higher and professional education and such related matters ?

Each one of these issues deserves to be considered either singly or in combination, before it is possible to have anything like an idea of what it would be like in AD 2000. Let it not be overlooked meanwhile that what is under discussion is only a decade away. Even if the strategy of development referred to above more than once is drastically changed, as it ought to be changed, it would be quite some years before its impact would be felt. This is only a way of saying that the situation in AD 2000 is not likely to be that markedly different as one would like it to be. But on the assumption that things would start changing in the near future, it should be permissible to take a somewhat hopeful view.

III

Universalisation of elementary education (UEE) is one of the cornerstones of the New Policy on Education (NPE). During the first three years of its implementation, some marginal improvement has taken place. Indeed this is about the only sector of education where some impact of the NPE can be noticed. What has contributed to this somewhat gratifying development is increased outlay on elementary education. Operation Blackboard has meant the infusion of a little less than 400 crores into the educational budget during these three years. In addition, something close to this amount has been diverted from other channels towards the erection of school buildings.

However, almost everything else in the NPE is going on as before largely owing to the fact that the entire system of education has acquired a thrust and orientation of its own and the middle class which is its main patron and beneficiary is not prepared to accept any change which would work to its disadvantage. If elementary education has improved somewhat because of increased input, that is welcome. But anything which even remotely dilutes the advantages enjoyed by the privileged sections cannot be countenanced. That seems to be the overall approach.

To provide any more details about the situation is not called for. If the base is broadened, it will also mean expanding the facilities at the secondary and higher secondary levels to that extent. If the National Front keeps up its commitment of allocating 6 per cent of the national income to education by 1995, one can look forward to a much wider coverage of children at the relevant age and expansion of the system all along the line.

Should this come to pass, the real pressure would be exerted at the secondary and higher secondary stages of education. This would be so because a larger proportion of children would be reaching this stage of education. According to the statutory directive, schooling is compulsory from the age of 5 to the age of 14. That means that almost every child would be completing his lower secondary education. Since a substantial number would discontinue at that level, vocationalisation would unavoidably have to be given considerable emphasis.

It is not possible to go into details of what requires to be done at that level and to what extent it would be done. But it should be clear beyond doubt that vocationalisation would have to be given impetus. Substantial outlay would have to be made available for that purpose. In fact, if vocationalisation were to catch on (and this to a large extent depends upon its interaction with unorganised industry and the growth of educational facilities in the ITIs and various other institutions imparting training in crafts, etc.), the outlay at this level would perhaps be 100 times more than it is today. Maybe it is even higher.

Should that come to pass, the pressure on colleges would be relieved. And quite a percentage of those who now choose to go to college will find it more rewarding to branch off at the higher secondary level. As of today, something like 5-600 crores are being spent on these sub-standard colleges. These colleges have no academic justification but they come into existence for all kinds of reasons which do not have to be identified here. Having once come into existence, there is no way that they can be closed down and that is how their number has been proliferating over the decades. Something like 3,000 colleges belong to this category; this is approximately half of the total number of colleges.

It should be clear by now why it was necessary to refer to the earlier stages of education and analyse the linkages between the different stages. The real crucial stages are 14+ and 16+. Until the age of 14, everyone is required to be educated. The state has an obligation to do so and naturally the state cannot ask students to pay for it. After the age of 14, however, it is a different question.

Another aspect of education upto the age of 14 that requires to be referred to here is that students are required to learn a wide range of subjects so that they come to have a good foundation of general education. Once that foundation has been laid, it is time to diversify at the age of 14 and 16 respectively. Some would drop out and enter the world of work while others would go in for the vocational stream and still others would go for the general stream of education which would prepare them for higher and professional education.

The problem today is that almost everybody goes in for the general stream, regardless of whether he eventually goes to college or not. A certain differentiation at that level is however highly desirable. What is more, it would correspond to the demands made upon them by the market. As also the needs of the economy. Once these dimensions of the problem are taken into account and there is better intermeshing between the demands of the economy and the system of education, there would be much less wastage of human resources and better and higher productivity. This is the ideal. To what extent it can be fulfilled is another question and one that cannot be gone into at this stage.

From the point of view of higher education, what needs to be underlined is the fact that today what is called higher education is somewhat bloated because of the existence of a substantial number of students who do not know what else to do and therefore join a college. Employment is difficult and the market is overcrowded. If the rate of growth today in the college and university sector is not what it was in the 50s and the 60s, the explanation is primarily twofold.

One, there is no backing to be cleared and, secondly, continuing unemployment discourages people, to some extent at least, from pursuing a course in a college. Those who join college today are either interested in going on to higher education or come from families which can maintain them while they are enrolled even though they do not look forward to a particularly quick or positive return on the time and money spent. They have a vague kind of idea that it might lead to better employability for their children and quite often it does. But the linkage between expectations and fulfilment today is not as definite as it was a few decades ago.

IV

When one looks at the educational experience of different countries, one is struck by the considerable variations in regard to the first degree from country to country. In UK, for example, the first degree is fairly specialised. It is more or less the same on the continent. But the moment one crosses the Atlantic and goes to the US the situation becomes different. In that country the first degree does not have the same kind of specialisation and the same degree of rigour that is to be encountered in British as well as the continental universities. Even on the continent, there are variations but one need not go into that issue here.

In our country the first degree has not meant specialisation of any kind; that is achieved only in certain universities and that too at the honours level. However, standards of performance have deteriorated a great deal as compared to, for instance, the beginning of the century. Why should that be so is an issue that better be raised and answered for it is likely to throw a good deal of light on the preceding stages of education.

What has been happening is something like this. At almost every level of education, what requires to be done is not done. Nobody is forthright enough to object to the laxity of standards. In consequence even when the students have done say, something like half of what they ought to do at a particular level, they are permitted to move on to the next higher stage. The deficiencies thus created are never taken care of and students move from one stage to another without having drawn fully abreast of what they ought to have done at that particular level.

This has had a profoundly unsettling effect on the whole system of education. Speaking more specifically of what happens at the first degree level, students who pass out from school have not reached that level of competence which would enable them to make the transition to the college. Almost everywhere, the first year of the degree course at the college caters to what is usually described as remedial teaching. What students ought to have done at school is now sought to be done, or more appropriately, compensated for at college.

For an illustration, one has only to refer to the experience of the last decade or so when one year was added to school education and the higher secondary level too came to have a duration of two years instead of one year. Had the changeover been handled effectively as was visualised, the situation in colleges would have been radically transformed. That was the original intention. However, the intention has not been realised with consequences that are there for everybody to see.

It may be recalled here that the three year degree course was introduced more or less all over the country towards the end of the 50s. This was to replace the earlier pattern of intermediate and degree courses. When it was realised that by transferring one year to the school level, the preparation for entry into college had not become really effective, it was decided to add one year more to school education and make higher secondary a two year programme. To be precise, two objectives were visualised. One was to make the +2 stage autonomous to some extent as a distinct stage at the school level and the second was to prepare the students much more intensively for entry into college than had been possible earlier. As already noted, this whole changeover was mucked up in more than one way. Since that is not the issue under discussion, no more need to be said about it. But its impact on college education has to be taken note of.

The first degree in almost every university continues to be more or less what it used to be, say, half a century ago. What is done in two years is now done in three years. From that point of view there has hardly been any improvement in the situation. On the contrary, in certain respects things have to some extent worsened. This has happened in those states where students at the school level cover a good deal of what is done at college. In science subjects in particular, the overlap between what is done at the +2 stage and at the college stage is rather well-marked. Instances are not unknown where those who have gone through the earlier phase of schooling sometimes feel underemployed and inactive, at least in the first year of the college.

As should be evident, for all kinds of reasons (shortage of funds being one and the vested interests of those in teaching positions already being another), a situation has arisen where there is neither clarity of objectives nor adherence to a uniformly accepted level of performance. In other words, it can happen and indeed it does happen that while the general average is low, in certain universities it is uncommonly low. This in turn is carried over to the next higher stage of the master's degree. In consequence, standards at the master's degree also vary from university to university.

One reason why the UGC has now introduced a test for those who want to go into teaching is because there is no other way of screening out those candidates who have a questionable kind of master's degree. With inbreeding being practised on a large scale, it is not uncommon for these 'sons of the soil' to find their way into teaching jobs in the same university. This kind of academic functioning indirectly perpetuates a cycle of under-performance and continued low standards. It should not be necessary to examine the motives of the UGC in any further detail. Nor need one speculate as to the extent to which this particular step would help to bring things under control.

At the root of all this lies the unresolved issue of what should be the level of performance at the first degree level. It is not possible to answer this question in precise terms. Standards or performance cannot be defined in this manner. When the UGC appointed a Standards Committee in the mid 60s it came to no other than this uncomfortable conclusion that standards vary not only from time to time but also from place to place and course to course. In fact, the UGC did not require a committee to tell it all this. But then, constituted as the UGC is, it does not hesitate to labour the obvious. One thing to which this UGC-appointed committee did not refer, however, requires to be mentioned. It was brought out most forcefully by a committee appointed by the Government of Karnataka under the chairmanship of K.N. Raj in the early 70s.

This committee was more or less the first one of its kind to underline the problem of poor linguistic abilities as one of the more serious problems at the undergraduate level. In saying this, the committee has not gone into the question of English versus Indian languages. That was not the point at issue. What was at issue was the poor linguistic skills of undergraduate students. If the average student was not competent in English, it did not simply that he was competent in his own language. He was equally incompetent there also. In plain words, his long years of schooling did not provide him with that capability to wield any language to express himself which he should have acquired by then. This is one of the important objectives of school education in any educational system. But our school system is particularly deficient in failing to provide this kind of capability at the school level.

To cut a long story short, what is sought to be done at the first degree level is sought to be made up, to whatever extent possible, for what a student failed to learn at the school level. The most important omission obviously is his inability to acquire proficiency in any language. To some extent the deficiency is repaired at the college level no doubt. But it would be a bold man who can say that this problem is adequately or fully taken care of even at the undergraduate level.

Linguistic competence paves the way for the acquisition of that level of knowledge which a student studying a couple of other subjects would acquire. This is more true of the humanities and the social sciences than of the sciences but even there, there is the problem of students failing to grasp the concepts behind some of the things being taught to him. If he has reached that level of understanding which would give him facility to wield the language of his choice it stands to reason that he is well-equipped to take in the concepts in the various disciplines for which he has opted. In other words, were our schooling to be better, our colleges would inevitably perform better. One crucial reason why they under-perform is because the academic demands made upon them are not rigorous or demanding enough.

V

At this stage, related question may be raised. What should be the duration of the undergraduate course? The UGC has laid down that for anyone to get into a post-graduate coure, he must have done 15 years of education. Put another way, the pattern visualised is 10+2+3. It is possible, however, to split the last three years into two parts.

It is to permit students to complete their BA pass in two years. These students do not have to join a post-graduate course and the UGC requirement does not apply to them therefore. West Bengal has adopted this pattern. In a manner of speaking, it is more or less the same pattern as obtained earlier when instruction at the intermediate level was for two years and it was the same at the bachelor's level. The only difference in terms of the new system is that the intermediate stage was then covered at an intermediate college; the +2 stage is now covered at school.

This is the theory. In actual practice almost two thirds of students at the +2 stage are still being instructed in classes being run in colleges. The changeover to the school stage has not been effected largely because of lack of resources. Should more resources become available, this would not present a serious problem though, to be sure, teachers working at this level do not want to be bracketed with school teachers. In a number of States, they have offered strong opposition to such a changeover.

In Maharashtra, for instance, teachers at both levels are organised under the same union. In 1987 when the college teachers had called off the strike all over the country, in Maharashtra it continued for several weeks more because the two were coupled together and it was not so easy to delink them. Eventually an agreement was reached whereby some promises were made to the advantage of the +2 level teachers. This was in lieu of the denial of the UGC scale to them. The State Government stood firm on that issue but had to make certain other concessions and the whole thing still continues to be some kind of tangle. What has happened in Maharashtra has been repeated in one form or another in a number of other States also.

To come back to the West Bengal pattern, however. No other State has adopted this pattern. Nor has the West Bengal experiment been anything like a marked success. In the mid-eighties when this issue came up for discussion in UP, same short-sighted decisions were taken. Those have been implemented to some extent but not entirely. The point to note, however, is that UP represents both the perils and the possibilities of what could have been done and what ought to be done. This is said for the reason that UP was the only the State in the country which refused to switch over to the three year degree course. Partly it was for academic reasons but by and large the considerations were financial. Funds of the required magnitude for the changeover were not forthcoming. Therefore, whether by design or accident, UP continued to follow the old pattern.

In the new context it was open to UP to opt for a two year pass course and a three year honours course as West Bengal had done. While it is possible to argue on both sides, it needs to be acknowledged that the West Bengal pattern has two undoubted advantages. One, those who are academically motivated can go in for the kind of specialisation that an honours course represents. Wherever such students go on to post-graduate, work, they are better prepared than otherwise. But even if they do not, nobody is the worse for it, for they have attained a level of performance which would have been unavailable to them otherwise.

The second positive advantage is that it saves the State one year of outlay at the college level. In financial terms this is not an inconsiderable gain. Those who are keen to have the first degree can have the satisfaction of getting it after two years. If by any chance they feel that they misjudged the situation or have a change of mind or wish to move on to an other track for any reason, they can do so conveniently by opting for the bridge course spread over one year. This enables them to prepare for a post-graduate course in case they wish to. Flexibility both of planning and operations is one advantage of this system and saving in outlay is another. But not many States have opted for it. Why this is so is a question that needs so be examined.

Before that is done, it may not be out of place to refer to the Delhi experience in this regard. Delhi may be a Union Territory but the number of students in this small place is very large. In any case, with funding available directly from the Centre, there has never been any dearth of funds for any kind of experiment that might be undertaken. For instance, Delhi was one of the first few places in the country to extend the duration of the school by one year in the late fifties. Again, when the duration was extended by yet another year and the +2 stage was introduced, Delhi switched over to the system with great alacrity. Not only that. The Central Board of Secondary Education being directly administered by the Centre chose to enrich and diversify the +2 course without any hesitation; funding for the purpose was readily available. While it would be invidious to compare Delhi with what obtains in other States, it is a safe statement to make that it is in the forefront of experimentation as well as actual performance.

Once the +2 system in the form as it obtains today, was adopted in Delhi, it would have been almost logical for the University of Delhi to adopt a two year pass and a three year honours system. This is said for two reasons. One, standards of performance at the +2 level in Delhi were and are uncommonly good, both in the privately-managed schools which are very numerous in Delhi and the government-run schools which too perform at a fairly satisfactory level of competence. In other words, the products of the school system were fairly well-trained unlike most other places in the country. Delhi, as is widely recognised, has about the strongest school system in the country.

Secondly, the honours system has been an established part of the academic sense in Delhi for almost four decades. Not many universities in the country have had the benefit of such a well-established system of what is known as 'streaming'. Over the years, a kind of system has evolved whereby the more capable students generally opt for the honours course and the rest opt for the pass course. With the kind of schooling that they have, even a two years pass would have been quite satisfactory. But that was not to be.

This would have adversely affected the college teachers who are already in position. One-third of them or thereabouts would have been rendered surplus. Even if they had not been declared redundant, new recruitment would have slowed down. This was not acceptable to the teachers' organisation which was very well-organised in Delhi. The University authorities were reluctant to have a confrontation on this issue. Therefore, the three years pass course stayed and was not converted to a two years pass as could have happened and indeed ought to have happened.

VI

What is called 'teacher power' is a factor not only at the college and university level but also at the lower levels. One hears more about the university and college teachers for two reasons : partly because of the role of the UGC in pushing through, periodically, revised scales of pay and partly because they have an all-India organisation. In 1987, for the first time, an indefinite all-India strike was sponsored by the AIFUCTO. The strike could not be sustained beyond a month or so primarily because of two reasons : one, that it was an all-India strike and secondly, because it had been launched on an indefinite basis. The AIFUCTO entered into an agreement which did not help it in the ultimate analysis. Today the AIFUCTO is weaker than when it launched the strike.

No more need be said about this issue except to underline the point that teachers at the tertiary level are by now a well-organised force. Whatever decisions are taken have to be acceptable to them. Their role in regard to the duration of the pass course has been referred to; it is both decisive and powerful. For instance, more than a decade ago the UGC appointed a committee to go into the question of the reorganisation of the University of Calcutta. Soon after the report was submitted, the CPM came to power in West Bengal. Hardly any reorganisation of the University has been undertaken, one reason being that such a step would go against the interests of college teachers who not only are numerous—around 85 per cent of the total at that level—but are a part of the decision-making apparatus of the CPM. Hardly any action has, therefore, been taken.

This is true not only of West Bengal; it is equally true of various other States. In Bihar, for instance, at one stage, something like 70 to 80 teachers were members either of the Legislative Assembly or Council. One of them became the Chief Minister of the State and several others have occupied ministerial positions either in the State or at the Centre. Something of the same kind has been happening in several other States also and it should not be necessary to adduce further evidence to underline this point.

As would be readily recognised, teaching is the biggest profession in the country. The number of those engaged in teaching today is between three and four million. This is at a time when only a little over one-third of the population is literate. When every child goes to school and the percentage of literacy increases, it stands to reason that the number of those who are engaged in teaching will also go up correspondingly. There would be nothing surprising if, say, by AD 2000 the number of teachers at various levels is between five and six million.

Depending upon the financial outlay and social and political mobilisation, it could even be higher. With so many people working in this sector, the issue of their scales of pay, conditions of service and a dozen other things is bound to create all kinds of problems. Though the situation varies from State to State in certain crucial respects, in regard to most basic things there has to be a kind of parity, if not also uniformity. Hardly any attention is being paid to this issue. I have argued elsewhere that instead of treating teachers as a part of the government set-up or more or less in terms of what is provided or not provided to those working for the government, it would be more appropriate to treat teachers as well as those engaged in the health sector as belonging to a separate category.

This would be the service sector of the country's public service. In a large number of respects (salary scales, conditions of services and other privileges) rules and regulations would have to be reformulated for them on a separate basis rather than on the same basis on which others working for the government are treated. No more need to be said about this particular issue except to emphasise the fact that with such large numbers operating in this sphere of operation, a new approach and a new mode of organisation would have to be worked out in respect of the teaching sector. Some preliminary work was done by the two Teachers' Commissions which reported in 1985. A good deal more, however, requires to be done. Hopefully this would happen before this century is out.

Apart from teacher power, student power too is a factor in the situation. There have been phases in contemporary history when student power has been a force and on the whole a disruptive one. Currently, students tend to be cynical as well as apathetic. Not only that, dishonesty and corruption in the academic process have come to be accepted as the general norm of behaviour. All this is linked up with low standards of performance and the absence of academic rigour. Wherever any attempts are made to tighten up things, student resistance is encountered and it is rarely that any such moves are carried through with any degree of success.

This is true all along the line. There is hardly a sector of education at any level where standards of performance are well-maintained. Or there is accent on quality. Unfortunately, there is a sharp line of distinction between that small sector of education which performs well and the numerically larger sector which fails to perform. The bulk of the student population is to be found in the latter rather than in the former. Also, it is no coincidence that it is the affluent who patronise the small, functioning sector and it is the poor and not so poor who are obliged to study in institutions which are poor and substandard. In plain words, there are two sharply polarised sectors of education. Both of them exist side by side and function as if on parallel lines.

No more need to be said about this particular aspect of Indian education except to say that owing to a variety of reasons into which it is not possible to go here, what is called 'student power' has degenerated into some kind of delinquency. Protests in regard to certain issues on the local level are there but there is hardly an all-India organisation except in name. Nor are there concerns of an ideological kind as there used to be at one time.

One cannot, however, infer from this that the situation would stay as it is. It can change. Likely enought it will. The Indian polity is passing through troubled times. This in turn can generate certain pressures which, before long, may come to assume the dimensions of a social movement. Anything of this kind can happen. Everything would depend upon what shape the polity takes and in which direction it moves. Since that is something about which it is difficult to speculate with any degree of precision, it would be risky to speculate about the nature and thrust of the student movement in the years to come.

The only thing that requires to be said is that if the student movement continues to operate on the more or less delinquent and a political plane on which it has been operating for the last several years, that would be tragic. It is the young people who as a rule are innovative and idealistic. Nothing more unfortunate can happen to a country when even the young people fail to rebel. Something of this kind has been happening during recent years and all that one can do is to look forward to a change in the social landscape.

It should not be necessary to spend much time on the problems connected with the functioning of non-teaching employees in colleges and universities. Over the years they have developed a lobby and an organisation. At the State level they are strong but at the all-India level they hardly count for anything. The fact, however, remains that on a number of occasions they have been able to create situations which impede the academic process. Sometimes it is the State Governments (who for the most part control their scales and conditions of service) which are at fault. Sometimes, however, it is the local heads of institutions who do not know how to manage this particular sector of their organisation and in consequence this leads to loss of working days and several other upsets. Properly speaking, this sector should not be difficult to manage; only the right kind of managerial capability has not been brought into play in most cases.

However, there is one aspect of this problem which should not be overlooked. In most educational institutions, there is overstaffing at that level. In certain institutions a substantial portion of the budget, sometimes as high as one-fourth or one-third is spent on non-teaching employees. How and why this is happening is a long story and it is not possible to analyse it here. It is either lack of management or mismanagement. In the years to come, this problem would have to be faced because otherwise most academic institutions would continue to be disturbed in a manner that they should not be.

The purpose of analysing these various forces at work in the educational sector was to bring out the point that education cannot be divorced from the social setting in which it operates. This in turn releases certain social forces. They act and react with one another and eventually create a situation where the academic process either gets thwarted or is at least thrown off balance for a while. In other words, what needs to be recognised is that wherever large masses of men and women are obliged to work together, problems of coordination and management are bound to arise.

And once they arise, the same degree of expertise has to be brought to bear on their resolution as is needed in other sectors of activity. The management of education, if one may put it that way, has been a sorely neglected aspect all these years. It would have to be given much greater attention than has been given to it so far. At the moment one does not even see due recognition of this dimension of the problem. Once that is done it would take a few years, say, the next decade or so, before higher education can be organised on administratively viable and academically productive lines.

VII

Yet another aspect of the issues concerning the kind and quality of the first degree needs to be referred to here before one takes up the related issue of the post-graduate degree. It was at the end of the seventies that the UGC issued certain guidelines in regard to the reorganisation of undergraduate teaching. Briefly the UGC recommended a three-fold approach. One was to have some kind of a foundation course; the second was to ensure a greater degree of depth in regard to the study of two or three disciplines which an undergraduate has to study; and the third was to introduce what may be called the applied bias.

It is ironical that even after a decade, not even a dozen colleges in the country have implemented these schemes of reorganisation. Even the Central universities which are directly administered by the UGC have not implemented what was recommended.

As should be evident, each one of these innovations seeks to repair the existing deficiencies in the academic situation. The foundation course is meant to give that broad spectrum of knowledge to every student which a young person ought to possess today. Secondly, the objects which are studied at the undergraduate level are not studied in proper depth. The UGC recommendations, therefore, put the accent on achieving higher standards of performance. Not many people would disagree with this approach of the UGC; only putting it into effect demands a kind of commitment to quality which, for the most part, is absent.

It is the third part of the recommendation, however, which has met with the greatest resistance. Right from the middle of the nineteenth century, the kind of curriculum followed in our universities has been bookish and theoretical in character. To whatever extent this kind of knowledge was applied to practical situations, the job was done by the individual himself rather than on the basis of what he had been instructed in. For quite sometime, therefore, a strong feeling has grown that what is called the applied content of undergraduate education should be as much an integral part of the course work as any other. But this is precisely what is being resisted.

It may not be out of place to illustrate this approach with one or two examples. If someone is doing chemistry, why should it be difficult for a student to undertake soil testing in case he is located in a rural area or various articles of food for any kind of adulteration ? Similarly, if someone is doing physics, it should be possible for him to undertake repairs to various articles of daily use around the household. Again, if someone is doing economics or commerce, he can be asked to study the market trends, fluctuation of prices and such other issues. In its guidelines the UGC has covered the whole range of undergraduate disciplines to depict and describe what can be done in respect of each university discipline.

In order to be able to do all this effectively, most teachers would have to re-educate themselves. A small proportion of them can cope with this new requirement but a large proportion cannot. Most of them are not even convinced that this change of orientation is called for. They have been accustomed to a certain way of functioning and to put it no more strongly, they are not willing to change their ways. Academic conservatism is a well-recognised phenomenon. We witness it in our country with a vengeance.

Academic conservatism is one aspect of the problem but yet another aspect is the sheer unwillingness to exert. Conditions of work in our educational institutions being what they are, teacher power is very much a factor in the situation. The general thrust has been to oppose authority without at the same time adopting that kind of a professional attitude which is, so to speak, a pre-condition for academic progress. In any event, authority in India tends to be bureaucratic in character. To oppose authority is some kind of a virtue by itself. Therefore, were this approach to be accompanied by a commitment to high standards, things would have improved. As it is, neither social justice nor academic progress are being ensured.

In this connection, it would not be without interest to watch the experiment launched by the Indira Gandhi National Open University (IGNOU). In its syllabus at the undergraduate level, it has, by and large, followed the UGC pattern. It has two foundation courses, one in the sciences and the other in humanities. Every student has to take them. Then there are the core subjects. And last of all there is the applied element. Out of 120 credits, a minimum of eight credits have to be taken in respect of applied courses though it is possible for a student to take upto 16 credits. The syllabus was enforced in 1987. The stage when the applied content would have to be followed would be reached in 1990 or later. It is difficult to anticipate therefore how the students would cope with this demand made upon them. As far as one can judge, there would be no serious problem of implementation.

Even if it arises, it is likely to be taken care off. In that case, the question would arise : If the IGNOU can do it, why not others ? Is it for lack of leadership or lack of commitment or both ? Or is it because nobody feels strongly enough that this requires to be done and the academics involved in the process are not responsive ? Whichever be the explanation, the fact remains that this is an experiment worth watching.

No more need be said about the first degree except to commend the four-decades long experiment of the University of Delhi in respect of the honours courses. These courses have been running very successfully. A substantial number of students, something like 10 to 15 per cent of the total in Delhi, opt for them. When some of them opt for the master's course they are well-equipped for advanced work. Those of them that choose to enter the world of work are much better prepared than others who have only done a pass course. Were this pattern to be adopted more widely around the country, it is bound to help improve the standards of performance at the master's level.

Two of the problems related to the master's level may, however, be taken note of. One, related to the unavailability of competent teachers at the postgraduate level. In fact, there is such an acute shortage of good teachers at that level that even in university departments the situation is far from satisfactory. In plain words, it would be a tall claim to make that all those working in university departments are competent in the manner and to the degree that they are required to be.

And this leads to the second problem. More than 50 per cent of the post-graduate students pass out from colleges. When university departments do not have men and women of the required competence, it is too much to expect the colleges to be able to provide what the university department cannot get. The honest truth is that persons of the required calibre are not being produced in our educational system.

About 10 to 15 per cent of the capable ones migrate to other countries. Those of them that are working within the country are the products of a system which, all said and done, has been in a degenerate state for several decades. Even those who get first class or obtain distinctions of various kinds are not what they ought to be. That is why the UGC has introduced a test for those who can be recruited to various teaching posts and the CSIR conducts a parallel test of its own before its fellowships are awarded. What this indicates is loss of credibility which is widespread as well as profound.

Nothing illustrates this loss of credibility more decisively than the manner in which the Ph. D. degree has got devalued over the years. All kinds of horror stories are circulated about how these are written and evaluated. In respect of the sciences, Rais Ahmed recently conducted a study. Its findings have been circulated widely and what is said about the sciences is equally true of the other fields. Dilution of standards has gone very far and one of the first steps that requires to be taken to combat poor performance is to ensure that the Ph.D. degree does not degenerate any further. Instead, urgent attempts have to be made to reverse the process so that by the end of the century the Ph. D. degree is a coveted degree and betokens a quality of mind as well as a level of achievement which is associated with that degree in other countries.

As a matter of fact, what is called the pursuit of excellence as also of creativity would be the end product of these series of steps which required to be taken at every level. The beginning can be made with the Ph.D. degree. The next crucial step would be at the level of the first degree. Once these two stages are taken care of, what obtains at the master's level would automatically improve. It should not be necessary to go into further details, for those have been sketched already.

VIII

The social dimensions of higher education also need to be looked at. What *kind* of people would go in for it, what is their social background, what category of class they come from, what are their expectations in terms of returns and rewards and what social purpose do higher and professional education serve ? All these are related questions and might be dealt with at the same time.

The short answer to all these questions is that higher education through an indispensable element for the growth and development of any country is available primarily to the members of the middle class. Till 1947, it was the upper middle class and some other sections of the middle class which had access to it. Since 1947, even the lower middle class has come to have access to it. In addition, certain sections of the disadvantaged sections like the members of the Scheduled Castes and Scheduled Tribes have also been enabled to enjoy the hitherto denied set of privileges that go with higher education.

It would be recalled that the fifties and the sixties were years of unprecedented expansion in respect of higher education. The rate of growth was in the neighbourhood of 13 or 14 per cent per year. Before 1947 there was a good deal of unmet demands. Once the British left and decision-making came into the hands of people who were close to the mass of the community, there was tremendous expansion and a large number of new colleges and universities came to be established. This phase of expansion ran out its natural course of development by the beginning of the seventies when the rate of growth came down to four or five per cent per year. There have been some minor fluctuations since then but by and large this has been the average rate of growth during the last decade and a half.

Another fact that needs to be referred to here is that throughout these four decades since 1947, tuition fees at the undergraduate and post-graduate level as well as in respect of professional education have remained more or less the same. In a couple of States some marginal increases have taken place but those which have not changed the basic parameters in any way. According to the data available, in 1951 something like 20 per cent of what was spent on education came from student fees. Currently this figure has declined to 12-13 per cent.

It also needs to be noted that the expenditure on education is the next highest after the expenditure on Defence. While Defence expenditure is for the good of everybody, that is, the security of the whole country, the expenditure on higher education benefits the middle class more than others. This is particularly irksome; around 80 per cent of the revenue (85 per cent in the case of the Centre) comes from indirect taxes. In ather words, while everybody pays for higher education, only a small section get the benefit.

Off and on, suggestions have been made by various individuals and committees to step up fees, at least to some extent. Committees appointed by the government, however, steer clear of any firm commitment on this issue. The NPE document, for instance, has one cursory sentence about this issue and the Programme of Action does not say anything about it. It is not difficult to understand why everyone connected with decision-making fights shy of being forthright about it. The social and political situation being what it is, it would be difficult to carry through any such proposal.

Seen from another angle, the situation is like this. Not all students who continue with their education are that keen on joining college. Today a large number of them do so because there is no other alternative available to them. The government responds by permitting more and more colleges to be established so that there is no serious overcrowding or breakdown. The phenomenon called 'baby sitting' which has been described above describes how all this is done.

In this situation, the young people who are not too keen to get on with their college education do not see any reason why they should be asked to pay more for something which they do not want even in the first instance. What they get for the most part is not higher education but a way of passing time. To increase the tuition fees would amount to taxing them for this doubtful privilege whereas what they demand is employment and not a means of passing time. But employment is scarce and what is called educated unemployment if widespread.

The strategy of development followed over the years does not create as many jobs as there are people competing for them. In consequence, there is a kind of stagnation in the economy. This is not the place to go into the whole range of issues concerning the generation of new jobs and the capacity of the economy to do so. What we are concerned with here is the given fact that the young people would not easily accept a new imposition on them when, even as it is, they are dissatisfied with the situation in which they find themselves.

There is a stalemate therefore. Those who are concerned with education would like more funding to be available. Those in the government who allocate funds find that their resources are overstretched. Students who stand to benefit may be prepared to pay more but a substantial number of students who are not going to benefit are likely to be opposed to the notion of being asked to pay more.

Those who are not going to benefit from college education are several times larger than those who benefit. Nobody, therefore, knows how to resolve this situation. Meanwhile, it requires to be noted that at their last annual meeting, the Indian vice-chancellors who meet every year formally took the position that fees need to be stepped up. The vice-chancellors can say so. But the decision-makers, those who have to get votes from the public, will not act on this suggestion and therefore the stalemate will continue.

Without going into further details of this problem, it may be helpful to put forward an alternative point of view.

(i) It is necessary to draw a distinction between undergraduate and post-graduate teaching as it is equally necessary to draw a distinction between professional education and non-professional education.

(ii) Professional education is much more expensive than non-professional education. To equate the two would amount to distorting the situation.

(iii) A certain proportion of those enrolled at various levels are already in receipt of subsidies through various channels. These are mainly SC and ST students. In some of the south Indian States, as also Maharashtra, the other backward classes also belong to the protected category. Therefore, the proportion of those who receive subsidies in a few of these States is as high as 50 per cent of the total strength.

(iv) Clearly if a decision to step up fees is taken, the categories enumerated above would not be covered by such a decision. It is only the other students who would be required to pay a higher rate of tuition fee.

(v) Out of the other students, broadly speaking there are two categories One are those who can afford to pay and others who cannot. Those who can afford to pay should be asked to pay but those who cannot can be given loans and scholarships, as appropriate.

(vi) Who will get scholarship support would depend upon the rules framed for the purpose. Evidently, the academic merit of the individual concerned would be an important factor.

(vii) But perhaps the larger category of students would be those who would have to be given loans. Rules and regulations in regard to how loans are given and then recovered would have to be framed. But before that is done, a substantial sum of money would have to be set apart as Loan Fund and placed at the disposal of banks and other concerned institutions. This has not been done so far. Clearly nobody has tried to grapple with the problem in a concrete and constructive manner, nor has the idea of a revolving fund been given the consideration that ought to have been given to it.

(viii) Loans can be of various kinds. Some of them may be recovered and others may be written off. To what extent and according to what norms they may be recovered or written off are matters that cannot be gone into here. In any case it should be clearly understood that the interest on loans would not be particularly high but somewhat on the low side. Those who choose to settle down in other countries—the brain drain phenomena—would obviously have to be dealt with on a separate basis.

(ix) There are many more details of this kind which can be thought of but it should not be necessary to discuss them. The plain fact is that once a decision to step up fees is taken and clear distinctions are drawn as between various courses and various levels of education, the whole issue would take on a less menacing proportion than it looks today. At the moment there is a kind of scare about the raising of fees. Once the thing is rationalised, concretised and compartmentalised the whole scheme would look feasible.

(x) The various experiments recently initiated by the Andhra Government in this regard would have to be watched and analysed for such light that might be thrown on an issue that deserves to be handled somewhat differently.

To what extent are some of these ideas presented above likely to be accepted? All that one can say is that only a few of them would be found acceptable or implemented in the decade of the nineties. One thing is clear beyond doubt. The country is not producing enough wealth to be able to provide free and compulsory education for everyone from the age of five to 14. That is the primary obligation of the State. Once that obligation is met, it is both necessary and possible to provide higher and professional education to those talented students who, if suitably trained, can contribute to the growth of the economy.

The problem arises today because it is not always possible to distinguish the competent ones from the less competent ones. When the latter category of students also seek to join one of the higher or professional courses there is the problem of resources. Resources evidently cannot be stretched indefinitely nor can these be expanded on everyone who clamours for admission to courses which of necessity have to be limited in number both for reasons of manpower requirements and the cost of training.

How the problem can be solved has been tentatively suggested above. Whether these ideas can be implemented or not would depend on the continued dominance of the middle class which stands to gain by the present set of arrangements and the insistence of those at the bottom *now* to have a share of the cake. Which set of pressures eventually come to prevail will depend upon the shape of the polity in the next decade. For my part, I would like to say that even if we belong to the privileged section, it does not follow that we have to think of our own class interest and neglect the interests of those who are downtrodden and voiceless today. □

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Convocation

THE CARDINAL PURPOSE

Dr. S V. Chittibabu, former Vice-Chancellor of Madurai Kamaraj and Annamalai Universities and former President of the Association of Indian Universities delivered the Convocation Address at the Sixth Convocation of the Amravati University. In a scintillating address Dr Chittibabu observed, "It rests on our universities to harness the inner potentials of their students and channelise them in such a way that their intellectual pursuits promote and strengthen appropriate attitudes, respect the diversity of cultures and the dignity and freedom of the individual and adapt traditional values to the new conditions and needs that are evolving. This is the cardinal purpose of higher education as an agent of change." Excerpts.

What a Picture of Contradictions !

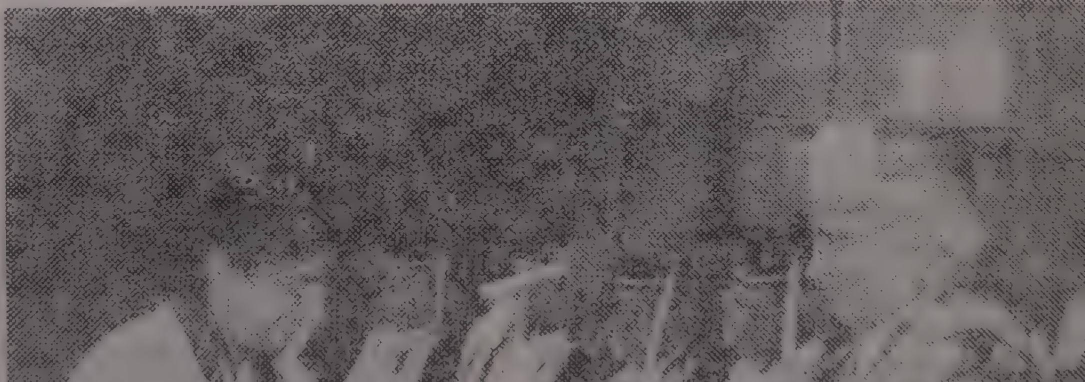
We have moved into the nineties of this century and in a decade from now we will be at the door step of the twenty-first century. Our present age in history which is witnessing for the first time the world becoming a global village thanks to sweeping technological changes is confronted with a challenge of unprecedented proportions. There have been spectacular developments in modern electronics which have brought about incredible transformations in the area of radio and T.V. broadcasting in telecommunication, in computational potential, in telematics and informatics. Dr. M.G.K. Menon had drawn our attention to the birth of what may be duly termed as the Information Age which will be of tremendous importance for the manner in which the society will have to be structured. Startling strides of development have been registered in the fields of biotechnology, space and nuclear technologies, solar energy, biomass, superconductivity etc., but the crux of the problem is that human spirit has been far outstripped by fantastic changes which have caused chaos and confusion and the loss of moorings and directions. The dignity and value of the individual person is threatened by the brute force and insensate behaviour of the faceless mass of machine and the totalitarian compulsions of society. There is such a widespread spectrum of sensuality and deceit, dissension and conflict, jealousy and hatred, sycophancy and hypocrisy, bribery and corruption that this world has indeed become too unbearable to live in. Serious students of the rising generations feel lost in a mass of contradictions and complexities. They are nonplussed when they witness greedy politicians, treacherous demagogues, unscrupulous business barons, wily self-seekers, downright drunkards, brazen drug-pushers and moral wrecks are not merely tolerated but even honoured as paragons of virtue. Then again, they are deeply perturbed by the outbursts of narrow sectarianism, unashamed regionalism and outrageous fanaticism. Reality is seen by them to be at variance with the values taught by teachers and text books. They are quite disturbed by the existing dichotomy between profession and practice, promise and performance. They have a feeling that values are a cunningly women myth to lull them into silence or take them for a ride ? It is disquieting that the entertainment media should pollute the minds of children and youth with movies that are intent on glorifying violence and crime, sex and glamour. With a view to hitting the jackpot producers and directors have no qualms of conscience when it comes to the question of projecting films which are bound to adversely affect the attitudes of juveniles during their impressionable years. Gross materialism has lured its victims into the temple of Mammon. The wrangle for grabbing a piece of the cake is ferocious and no holds are barred in this dehumanising game of trickery and self centredness. Reason has taken the backseat and emotions have been running riot. Rampant corruption has been playing the devil with the life of the common man.

A distinguished scientist, Prof. D.S. Kothari, who headed the Education Commission (1964-66) has thus described the grave aberrations afflicting our world : "Knowledge is expanding but human personality is shrinking. . . On the one hand we have the exponentially rising, growing spiral of science, technology and productivity, the STP spiral, and on the other we have greed, hatred and delusion—the GHD spiral . . . Globally speaking the military expenditure every minute is more than a million dollars (Rupees one crore) to fuel the GHD spiral. Every minute more than a million dollars is spent to make the world worse, not better. That is the tragedy of the human situation."

The Quest for Quality of Life

If we are to prevent further defacement and defilement of our culture, the foundations of a refurbished value system must be strongly laid in the minds and hearts of the people as urged by the constitution of UNESCO. The material power of man which springs from the dominance of science and technology needs to be bridled and tempered by the pursuit of a quality of life based on the faith in and sincere practice of human values. The concept of quality of life, says Dr. Prem Kirpal, an eminent educationist, is an emerging vision of our times, sometimes reflected in the spirit and attitudes of idealistic youth. As pointed out by him, "the humanism of the past was based upon man's discovery of himself followed by liberation from taboos and dogmas imposed by fear, superstition and unreason; the humanism of tomorrow seeks to substitute love of power, stresses the brotherhood of man and his common humanity and probes towards a new relationship for man with his cosmos—a new humanism free, wise, compassionate and loving, and ever aspiring to the light on the hills and the stars beyond". It rests on our universities to harness the inner potentials of their students and channelise them in such a way that their intellectual pursuits promote and strengthen appropriate attitudes, respect the of diversity cultures and the dignity and freedom of the individual and adapt traditional values to the new conditions and needs that are evolving. This is the cardinal purpose of higher education as an agent of change. Arthur Bestor, the American author of a provocative book titled *Educational Wastelands* regrets that the youth of today are not being effectively prepared for mature value oriented intellectual life. He criticises the professional educationists for being more concerned with "how to teach" rather than with "what to teach" and says that it is these specialists who make educational wastelands of universities and colleges. Even so Reginald Damerell, another American critic in his book *Education's Smoking Gun* has exposed in shocking detail the emptiness of the "educationist" curriculum where teaching techniques and tradeshows on teaching machines almost entirely dislodge the actual subject matter of true education subjects such as mathematics, philosophy, history, literature, chemistry, etc.

Freedom and adventure in the process of education and self-education releases creative impulses and fuels mental vibrancy. Mechanical teaching and learning, when over-emphasised by educational theories and techniques which fill the mind with loads of learned lumber, becomes counter-productive. Then there is the mounting pressure of modern mass media and the irresistible craft of salesmanship which of late have been allowed by the average citizen to think for him and decide for him. Day in and day out high power advertisements tell people what to purchase, what to taste, what to think, what values to regard. Another roadblock to clarity of thinking or even the inclination to think is the physical and mental sluggishness and the creeping inertia which is induced by a life of ease, comfort, self-indulgence and attachment to asinine pleasures. The downward pull of these forces



Dr. K.G. Deshmukh, Vice-Chancellor, awarding a medal to one of the winners.

had sealed the fate of many civilisations in the past and it is threatening to destroy our intellectual and moral fibre today. But fortunately the light of the mind has not been totally put out all over the world and history is replete with instances of how the mind has devised its own ways of eventually overpowering its captors. Even when harshly harassed for giving expression to their unpopular views or ideas, men of the calibre of Socrates, Christ, Lincoln and Gandhiji courageously upheld their convictions and the right of man to freedom of thought. Galileo was pressured to give up his support to the Copernican theory under threat of torture. But even as he was signing the recantation, he is said to have muttered, "And still the earth moves !" Bruno, the Dominican friar, was declared a heretic and burnt to death by the Inquisition. Thus the great martyrs of history have been those who undauntedly perceived the truth whether in the realm of knowledge or of values and who were ready, when necessary, to make the supreme sacrifice.

The quality of life, therefore, cannot be enhanced without the unhampered pilgrimage of the mind towards truth and excellence which constitute the power-house of creativity and the spring-board for all human valves. Universities and Colleges will have to stress the significance of thought and moral values because, as the late Prof. K.G. Saiyidain tellingly remarks, "without the saving grace of free and swift thought, man would be reduced to the level of a mere pygmy, a speck of dust dancing helplessly in the wind for a brief meaningless second, on one of the smallest of the innumerable planets". Higher creative life is the clearest and purest expression of the essential characteristic of life at all its points and levels. All life, however commonplace, is saturated with the self-same elements whose inflorescence is literature, philosophy, science, art and religion. They proclaim the victory of the creative human spirit striving towards more truth, more goodness, more beauty, more light. But modern education that universities are expected to impart, has to address itself to the lofty task of emancipating man's mind from the stranglehold of conservatism and obscurantism. Swami Vivekananda condemns man's reactionary tendency to seek asylum in the moth-eaten traditions of his forefathers and invest them with an unjustified sanctity. Man's true life, as Bertrand Russell has aptly argued, consists not in the satisfaction of his pressing physical wants but "in art and thought and love, in the creation and contemplation of beauty and in the scientific understanding of the world".

Some Issues in Higher Education

Having underscored the role that universities have to play as a change agent giving the needed thrust to value oriented intellectual pursuits to offset the pernicious effects of materialistic aggressiveness and social cleavages, I would like to pin point some critical paradoxes and dilemmas in the existing situation of higher education and the pressing need to tackle them with care and tact, if universities are to be universities.

The first of these dilemmas that causes concern to higher education is the rival claims of quality and equality. The Kothari Commission's considered observations on the issue of equalising educational opportunities may be recalled in this context : "One of the important social objectives of education is to equalise opportunity, enabling the backward or underprivileged classes and individuals to use education as a lever for the improvement of their condition. Every society, that values social justice and is anxious to improve the lot of the common man and cultivate all available talent, must ensure progressive equality of opportunity to all sections of the population. This is the only guarantee for building up an equalitarian and human society in which the exploitation of the weak will be minimized". The International Commission on the Development of Education (UNESCO) 1972, also reiterates that equal access to education is only a necessary—not a sufficient condition for justice. I would say that to the Western Vidarbha region, where we have a considerable percentage of inhabitants belonging to the Scheduled Castes and Scheduled Tribes the above reasoning must be at once relevant and meaningful. The University Grants Commission too in its 1978 Policy Frame condemns the monolithic educational system for having "proved itself to be inadequate to meet our national needs and aspirations" and asserts that "the system of double standards in educational institutions—one for the rich and the well-to-do-and the other for the large majority of the people should be done away with." But how is this to be achieved when the entire country seems to be tolerating such double standards ? Seats are no doubt reserved for Scheduled Caste and Scheduled Tribe students in schools, colleges and universities. In Tamil Nadu it is 18% for the Scheduled Castes and Tribes, and 50% for the Backward Classes, making a total of 60%. But in Bihar the very idea of reservations is anathema and students there are violently agitating against reservations. To ensure equality of opportunity scholarships and freeships have been provided for the educationally disadvantaged. But attempts are being made to delink this supportive system from considerations based on caste and tribe and make the concessions need-based with economic status as the main criterion. But they are stiffly opposed in many States. The UGC has suggested that methods of identifying talent by tests which do not discriminate against children from a disadvantaged background be devised and that preference be given to them, even if their talent rating is lower. But is this suggestion sincerely acted upon ? This apart, intelligence tests as such are nowadays looked upon with suspicion even in advanced countries. Remedial coaching and training instead of relaxation of admission criteria has been advocated by some educational administrators.

But the pity of it is that most of the proposals have been made for ensuring equality of educational opportunity stem from theorisation and conceptualisation without solid research studies to support them. It is not without reason that the criticism is made that educational policies are designed to subserve political interests and considerations only. As Dr. Chandran Devanesan once quipped "every Education Minister has his pet theories and ideas and when he goes, he leaves a lot of pot holes behind !" It is, therefore, necessary that national policies for education should be free from the impact of political fluctuations, if they are to have a certain basic continuity, no matter which party is in the driver's seat. Then again, our policy with regard to equality of opportunity in education tends to assume that we have already achieved a horizontal society without castes and communities being involved in hierarchical and vertical socio-economic structures. Therefore, what is being done is to provide a ladder by which a few from the depressed sections can go up into middle class sectors of society and the gainful professions. Then they become part of that strata of society with scrace concern for the less successful members of the groups from which they originally came. They also develop a vested interest in preserving the existing system of education so that they may continue to enjoy the concessions.

To serve the ends of justice, therefore, we have to see to it that our democracy, while implementing the policy of equalitarianism consciously and genuinely, does not ignore intelligence, skill and talent in the name of equality. Let us not produce a frustrated, discontented and depressed minority of bright and capable students in order to lend a helping hand to a depressed majority. The creation of new knowledge, its dissemination and its application to social purposes, some tending in the direction of reducing, not widening further gross inequality in the levels of living such are some of the desirable functions of higher education. In other words the challenge is to be met by colleges and universities by equalising access to the maximum extent and designing a content of education which meets current needs of the socially underprivileged. At least for some more time to come let there not be the absurd clubbing together of the hare and the tortoise in a racing competition in the sphere of education.

Another issue faced by higher education is in regard to rendering justice to women seeking entry into professional courses like engineering and technology, agriculture, medicine and business administration, not to speak of the arts and science courses. Nearly two thirds of their enrolment is in arts and commerce faculties. But the professional courses continue to have inadequate women participation. The earlier widespread belief that girls have less attitude and less intelligence than boys for the pursuit of higher studies, particularly in subjects like mathematics and science has been disproved by their impressive performance in university courses. Taking my own state of Tamil Nadu, an analysis of the results of B A., B.Sc., B.Com. Examinations of the Madrass University held in 1989 shows that the percentage of passes among girls was almost twice that of boys. Of course, I would not venture to pronounce that girls are necessarily more intelligent than boys. But it would certainly be correct to draw the inference that given the opportunity for education, the average girl student is more conscientious, disciplined, diligent and earnest. By denying equality of educational opportunity to women, therefore, the nation is denying itself the benefit of the full protential of half of its population. What is worse, this denial sucks out its own life blood and renders its anaemic and weak. Women's education is an instrument of liberation not only of women but of the Indian Society as a whole.

As Dr. P.C. Alexander, Governor of Tamil Nadu has recently commented, modern women while wanting to be loved and respected by men are not in the least interested in being extolled and adored with encomiums from them. Men sometimes wax eloquent over the glorious virtues of, Sita or Savitri. But they conveniently forget that an impeccable Sita had a blemishless Rama worthy of her devotion and a virtuous Savitri a blameless Satyavan deserving of her love.

When Gandhiji demanded equal

political and legal rights for women, he did not justify it on grounds of social justice alone but as a necessity and a means to achieve the needed social transformation. He insisted that women had the right to participate in the minutest details of the activities of man and had the same right of freedom and liberty as he. But unfortunately not many leaders of the nation shared Gandhi's revolutionary ideas then. For it is obvious that even today the restrictive view seems to prevail regarding women's role in sociery, viz. that just as the boys have to be prepared for the world of work outside the home, the girls will have to be prepared particularly for the work inside. This kind of view that women are to play the role of housewives and mothers only is the most glaring example of the class bias that determines much of our educational planning. But as the National Perspective Plan for Women's Development 1980-2000 has stressed, the emerging role of women not only as home makers but also as active participants in the task of building the national economy has to be unequivocally recognised. It behoves our universities to add this new dimension to the status of women in Indian Society. There should be a "perestroika" of the courses offered to women students in schools, colleges and universities in such a manner as to make them relevant to their lives as well as to their careers. Apart from this step, universities must mount a drive to create an awareness of the importance of women's involvement in national development among the parents, the public and the older generation and more importantly among the older women who have themselves been guilty of collusion with the perpetrators of discrimination against girls. Let us hearken to the words of Subramania Bharati, our national poet-patriot who greets the modern girls thus :

> "Hail and sing her victory
> Sustain this flame, the modern girl
> To change this world for better days
> and make us deathless all."

A third dilemma tormenting universities is the play of sociological and political forces which maka a compelling demand on the system of higher education to inflate quantitatively without effecting any fundamental change in its objectives, improvement in management and efficiency in performance. The colleges and universities have been allowed to expand with mindless haste to accommodate a bulk of ill-motivated, ill-prepared students from urban and rural sectors, with the attendant deterioration in standards. Quantitative expansion has necessitated increasing measure of the mechanisation and routinisation of teaching and evaluation. But in the process universities have undergone transformation from being small communities of teachers and students engaged in the pursuit of knowledge to unwiedly organisations which conduct education in a highly impersonal manner. Interpersonal contact between the teacher and the taught is hardly possible in a climate of crushing weight of numbers. With a view to ensuring standardisation, expansion of higher education has been followed by increasing centralisation of the functions of the definition of syllabi and cnrricula and of evaluation. It is at the central level that curricula are framed, and books prescribed by committees and boards of studies. Examinations are organised and conducted centrally. Teachers have no say in the construction of curricula. Nor do they have the independence to modify the courses they teach. Even so they have no option but to conform to the canons of evaluation as laid down by the universities. With standardised evaluation, examination questions grow to be more and more predictable with the result that the students are not inclined to equip themselves for their examinations, dynamic relationship with teachers and books. They tend io depend more on 'model' answers to 'expected' questions, these being readily available in the market. Tutorial colleges have become the asylum of candidates who are drilled by instructors and furnished with cribs, digests and bazar notes, with the assurance of success in the examination. Naturally the warmth of personal relationship between teachers and students is now conspicuously absent in most colleges and universities. The situation deteriorates into one wherein a well-read and intelligent student with a capacity to think independently and critically finds it difficult to score higher marks than others at the examination. The scale on which marksheets and performance sheets are manipulated or admissions and certificates granted on payment of kickbacks has burgeoned to such an extent that many believe that corruption is an accepted virtue in higher education and not merely an occasional malpractice. Students and teachers alike are sceptical about the real value of qualifications, when they see the cooking up of results and the awards of first classes and distinctions and even ranking in a merit list in return for a pay-off. Can we imagine anything more damaging to standards than this ?

It has therefore become imperative to stem the rot and restore the credibility of university examinations. The establishment of a few centres of excellence for undergraduate education or of autonomous colleges with structures conducive to the fostering of standards has not found favour with some sections of teachers because it is alleged that they smack of elitism. This resistance from the academic community is unfortunate. "Infact practices and procedures in higher education" says a distinguished professor "have so carefully been geared to avoid elitism that excellence is bulldozed into uniformity with the average." Notwithstanding certain vested interests vitiating the steps taken to raise standards, efforts need to be made to identify how and where egalitarianism comes in the way of the promotion of excellence and to find ways and means of nurturing quality and excellence without marginalising equality of opportunity.

The Value of Life-long Education

Education, if it is to be meaningful and fruitful, should help one to live a "full-life", to "drink the cup of life to the less" as Tennyson's *Ulysses* would say and it should be a continuous and life-long affairs. You will be surprised to learn that it was given to Thiruvalluvar, a Tamil Peot who lived about two thousand years ago to proclaim to the world the wisdom of life-long learning in a crisp couplet which is part of his celebrated work, the *Thirukkural*, which has been got translated into nearly sixty languages by UNESCO which considers it as a masterpiece of world literature. The English rendering of the couplet runs as follows :

> "Since all the learned whate'er land or town could deem their own.
> Why won't one throughout one's life keep on learning alone".

The poet's reference to all the states or countries would lead us to conclude that he insists upon a person learning the lores of the world till he passes away. What a grand thought of profound significance! The idea of life-long educatiod is the keynote of the learning society and it implies that one receives education not through formal schooling alone but through self-study, the promotion of which is one of the important characteristics of all distance education programmes.

As pointed out by Sir Jadunath Sarkar, your State has a remarkaable community of language, creed and life, thanks to your forceful and enthralling Marathi Literature, enriched as it is, by the soul-stirring devotional songs of renowned religious reformers like Eknath, Tukkaram, Ramdas and Vaman Pandit and the inspiring political and social thoughts of high souled patriots like Gokhale, Tilak and Vinoba Bhave. I do not think it is necessary for me to convince you of the significance of the concept of life-long and integrated education, what with your remarkable achievements in the field of education at all levels. The essence of the matter is that with the exponential growth of knowledge because of incredible advances in science and technology, and the introduction of kaleidoscopic social changes, life is moving fast. Life changed very slowly in the past and one could have said, in the words of R.L. Stevenson, that "Tuesday came for the simple reason that Wednesday was not due till tomorrow". Knowledge industry, so to speak, has become one of the major concerns of mankind and is engaging more and more persons. And a university degree is no longer neither adequate nor valid for a life-time in the present epoch. Unless you continually and constantly re-educate yourselves, you stand in peril of being brushed aside as backbanchers in the onward march of knowledge. A programme of life-long integrated education aimed at the fullest development of the personatity of the individual is a must both for his growth and survival. It has therefore become incumbent on the part of our universities to provide for this kind of programme on a flexible basis so as to cover every individual at almost eyery moment of his life. May they establish duly worked-out linkages between the formal system of education and the informal one catering to the needs of life-long education with the aid of massmedia. Material resources and the necessary expertise must be found by harnessing the financial and moral support of both Governmental and private agencies.

Goal-Oriented Cultural Integration

I wish to conclude my address with a fervent appeal to you all that you should pledge yourselves to the sacred, though formidable task of generating a new set of attitudes and values among the people with duly defined goals for all-round development. You shall not say, as one young architect seems to have to Marshall Mcluhan, a fearless critic of our times, "you see, my generation does not have goals. We are not goal-oriented. We just want to know what is going on. Not going on, but perhaps going out." You shall not give room for an inner identity crisis and cultural disintegration. Please remember that the unique quality of our Ihdian culture is that while other cultures of the world including the Egyptian, Cretan, Persian, Greek and Roman failed to preserve their identity and continuity, the Indian

(*Contd. on page 28*)

PONDICHERRY UNIVERSITY

PONDICHERRY

ADMISSIONS—1990-91

Applications are invited for admission into the following Ph.D., M.Phil , P.G., B.Sc., and Diploma/ Certificate Courses in this Central University.

Name of the School/Department	Courses Offered
(Ph. D. Courses include Full-time, Part-time Internal and Part-time External)	
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2. Salim Ali School of Ecology	: M. Phil. & Ph. D.
3. Sri Sankaradoss Swami School of Performing Arts	: M.A.
4. School of International Studies	: M. Phil. & Ph.D.
5. Sri Aurobindo School of Eastern and Western Thought (Department of Philosophy)	: M A. M., Phil., & Ph.D.
6. Raman School of Physics	: M.Sc., M Phil. & Ph.D.
7. J.C. Bose School of Life Sciences	: M.Phil. in Botany, Zoology, Ph.D. in Life Sciences
8. Department of Tamil	: **Pondicherry Centre** M.Phil. (Full-time) and Ph.D. **Karaikal Centre** M.A., M.Phil. & Ph. D.
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Computer Centre of University	: Post-Graduate Diploma in Computer Science Application
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17. Department of Physical Education & Sports	: B.Sc., degree in Physical Education Health Education and Sports (3 years) M.Phil.

In respect of Ph.D. programmes, **Full-time, Part-time Internal and Part-time External courses are offered.** In respect of M.Phil., except otherwise stated both **Full-time and Part-time courses are offered.** Applications may be sent accordingly separately.

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For forms of application and detailed information regarding eligibility criteria, reservation of seats and mode of selection, send a requisition to the Registrar, Pondicherry University, R. Venkataraman Nagar, Kalapet, P O., Pondicherry 605 104 with a self-addressed envelope affixing stamps for Rs. 3/- (Rupees Three only) along with a Demand Draft for Rs 25/- (Rupees Twenty Five Only) favouring the Finance Officer, Pondicherry University, Pondicherry, towards the cost of Stationery and Printing. SC/ST and Physically Handicapped candidates are exempted from this fee, but they should produce a certificate of caste/disability from the competent authority.

You have to get the forms and then send them after properly filling them on or before **15th June, 1990.** Please note the last date by which filled up forms should reach Registrar is **June 15th, 1990** (15-6-1990).

Candidates should prominently mention the course for which they are applying.

Pondicherry
20-03-1990

B.V. Selvaraj, IAS
REGISTRAR

XIV Indian Social Science Congress A Report

The Gujarat Vidyapith, in collaboration with Gujarat University, Gandhi Labour Institute, Physical Research Laboratory, Indian Institute of Management, Sardar Patel Institute of Economic Research, Gujarat Institute of Area Planning, organised the Fourteenth Indian Social Science Congress. Sponsored by the Indian Academy of Social Sciences, the congress was attended by distinguished academicians, research scholars and social scientists from various universities, research institutes and other bodies from all over the country. Prominent among those were Dr. D.T. Lakdawala, former Dy. Chairman of Planning Commission, Prof. Ramakrishna Mukherjee, Sociologist, Prof. Y.K. Alagh, former member of Planning Commission, Prof. M.S. Gore, former Director of Tata Institute of Social Science, Bombay, Dr. J.D. Sethi, Member of the Planning Commission, Dr. B.D. Sharma, Commissioner for SC/ST, Prof. Upendra Baxi, Professor of Law, Delhi Univ., Dr. N. Rath, Economist, Prof. D.P. Pattanayak; Director of Central Institute of Indian Languages, Prof. M. Juberi, School of International Studies, Jawaharlal Nehru University, Prof. Rais Ahmed, former Vice-Chairman, UGC, Dr. Y.S. Rajan, Adviser to Govt. of India, Ministry of Science and Technology, Dr. T.N. Khoshoo, Scientist and Prof. B.M. Udgaonkar, former Member of Planning Commission and President of the Indian Academy of Social Sciences. Prof. Ramlal Parikh, Vice-Chancellor of the Gujarat Vidyapith was the Chairman of the Organizing Committee.

The focal theme of the Congress was "Planning for India's Development : The Vision, The Challenges, and Implementation". Welcoming the delegates, Prof. Ramlal Parikh, stressed the vital need of fundamental understanding of all aspects of the development process. He said it was high time for social scientists of our country to get fully involved in seeking solutions to many sided problems of our planning and development processes whose magnitude had assumed threatening dimensions. He emphasised the relevance of the social science research in the context of designing appropriate programmes to identify and meet the needs of our masses at the grassroots. He also pointed out that the realisation of community self-reliance to remove the pervasive poverty and inequality in our society needed a greater effort by all of us. Prof. Parikh also briefly dwelt on the activities of Gujarat Vidyapith towards social transformation of the rural society through formal and non-formal education. Drawing the attention of the participants towards the growing problems of environment and fast depleting natural resources, he urged that the relationship between man and nature needed to be urgently harmonized.

Prof. Y.K. Alagh, in his paper on "Some Aspects of Indian Economic Planning" said that the objective of Indian planning was to correct the distortions of a received colonial economy in which foodgrains consumption was declining, per capita income was constant and large parts of the economy in which natural resources and population concentrations lay, were backward on account of transport and social infrastructure. He referred to the Mahalonobis approach in planning which attempted to spread technology through industrialization and the influence of Gandhian tradition on the plans. He pointed out that several studies had shown that a high rate of agricultural growth was a pre-condition of faster employment growth. But he cautioned that land reforms were essential for achieving employment targets.

Prof. Alagh felt that the state and local planning machineries would have to be strengthened if a more balanced and equitable growth process was to be achieved. He said that involvement of Panchayati Raj institutions in the process of plan formulation and implementation for block and district level plans was essential. He was also of the view that people's and beneficiary participation in special priority programmes, for example, education policy, distribution of irrigation water, programme of fuel wood and social forestry, wasteland development and diffusion of new technology was necessary.

Prof. B.N. Udgaonkar in his presidential address remarked that — 'the gap which separates the natural scientists and the social scientists in India is a matter of great concern, not only in relation to a balanced and comprehensive approach to the complex problems of development, which by their very nature do not respect disciplinary boundaries, but also from the point of view of evolving practical approaches to the resolution of these problems.' He felt that under the regime of planned development of the last four decades significant achievements had been made such as increased food production, growth of broad-based industrial economy, rise in the life expectancy, spread of education at all levels and an impressive stock of science & technology manpower. But our achievements had fallen short of expectations in relation to the objectives of growth with social justice and of self-reliance. There was a pervasive feeling that our achievements, though not mean by any standards, could have been much better, had our priorities been different and had our capabilities and capacities been utilized to the fullest. Prof. Udgaonkar asked 'How could the benefits of development be made to reach the neglected sectors of the population, and in particular, to contribute to the satisfaction of the basic needs of hundreds of millions who somehow eke out a living below or close to the poverty line ? He pleaded for a review of the planning and development experience, without the blinkers of conventional ideologies to identify the changes that were needed in policies, strategies, planning and implementation mechanisms, so as to ensure a faster economic growth with increasing social justice, taking into account the likely impact of the changes on the international scene. He also dwelt upon the subject of the expectations from science and technology and purposeful harnessing of science and technology. In this context he urged strengthening the planning for and through science and technology. He was of the view that in the absence of an adequate appreciation of this aspect of science & technology, and the purposeful harnessing of indigenous talent and technology to the many challenges of development, we have the tragically paradoxical situation in our society, that whereas the very talents should be drawn to these challenges, they were being lost to other areas, often soft ones, or were lost to opportunities abroad. According to him, they were being encouraged to migrate abroad, by parents and teachers, policy makers and decision makers, with a feeling that there were not enough challenges and professional opportunities of a high order within the country.

The deliberations of the congress were held in four plenary sessions at which the following observations were made :

On the basis of the contributions of the delegates and invited speakers, one discerns three perspectives. Two of the three perspectives are more explicitly stated than the third. According to one perspective, planning is to ensure continuous rise in economic growth. If a reasonable rate of economic growth is ensured the benefits will percolate to all sections of the society. In the face of the evidence from the spheres of agriculture, industry, basic needs like health and education which showed that there has been maldistribution of benefits of growth and increasing inequalities, the proponents of this perspective seem to argue that the problem does not lie in the basic goals of planning but in the way the plans are implemented. Lacunae in the implementation of the plans are due to bureaucratic organizational and cultural factors.

The maldistribution, according to this perspective, can be taken care of by introducing or adding certain welfare measures, including employment generation measures in the plans to rectify the distributional imbalances. Science and technology are major tools in planned development. What is needed is an appropriate institutional mechanism to utilize science and technology and to make suitable choice of technology for development. One may note that this perspective considers India's place in the international economic order in terms of interdependence and cooperation.

The second perspective seems to raise certain fundamental questions regarding the vision, objectives and strategies of implementation. According to this perspective the vision of planning presupposes certain values and hence planning in its formulation and implementation cannot be value free. Planning is a political process and its formulation and implementation occur in political area in which the State occupies a crucial position. To grasp and explain the empirical evidence—increasing inequalities, poverty, malnutrition, marginalization of deprieved group such as scheduled castes and scheduled tribes, and relatively low potential of the industry to absorb ever increasing labour force—should be sought in the character of the state and various interests within a class vying with each other in influencing state policies.

The perspective advocated for understanding the reality is basically the political economy of the society. According to this perspective, the State is non-neutral and the planning process under the auspices of the state is also not neutral. Thirty eight years of planning has led to increasing prosperity of a small minority and increasing misery to the majority of the population. In essence, planning appears to be an exercise of, by, and for a minority. This perspective also places Indian economy in the global economic system, rather in the context of international division of labour, and seems to suggest that it is extremely difficult to have independent policy options for India's development. Though the Indian Constitution ensures certain rights to the citizens, it has been difficult to enforce these rights because of the existing and more acute polarization of social strata in the society.

Both the perspectives feel uncomfortable with the prospect of increasing centralization of planning. Remedial measures according to both the perspectives are decentralized planning and people's involvement in planning. However, they seem to differ on characterization of decentralized planning and its implementation and the definition of the 'label'—people.

According to the first perspective, people should be involved in formulation and implementation of plans. This perspective seems to assume that there is a certain degree of homogeneity among people.

The second perspective, also believes in the involvement of people but argues that decentralized planning does not necessarily lead to development because the values associated with decentralized planning will principally reflect the values of the dominant interest groups.

However, there is an official notion—preclaimed in plan documents—of people's including their voluntary organizations' involvement in planning. According to this notion, involvement of people and the voluntary organizations amounts to endorsing the official version of planning and correcting any lacuna in its implementation.

Seminar on Open University System

The Nalanda Open University, Patna, organised a National Symposium on Basic Tenents of Open University System with financial assistance provided by the Indira Gandhi National Open University.

Prof. B.S. Sharma, Acting Vice-Chancellor, Indira Gandhi National Open University (IGNOU), New Delhi, inaugurated the symposium while Dr. Kumar Bimal, Vice-Chancellor, Nalanda Open University, presided.

Professor Sharma in his inaugural address emphasized the unique role of open university system in the field of higher education in the present day Indian/Asian/International context. He explained the impact of innovatory evolution in the shape of open university as an alternative strategy in the background of stress and strains on the conventional universities in imparting higher education. As a social scientist, Prof. Sharma dwelt at length on the factors and contours which might be underlined as the differentia between the open university system and the Conventional University System. He emphasised the networking of open universities in India and explained the modular structure of programme design and flexibility adopted by Indira Gandhi National Open University.

Dr. Kumar Bimal, in his Presidential Address, indicated briefly the historical importance of the ancient Nalanda University, with its rich libraries like "Ratnodadhi" and "Ratna Sagar", as a Buddhist seat of higher learning. Speaking in detail on the growth of universities in India since 1857, Dr. Kumar Bimal traced the development of the open university system in the Asian continent and in the Western world. He observed that though India is a country of 'Gurumukh Educational System' like 'Bharatdwaj Siksha Paddhati', which emphasized direct relationship between the teacher and the taught, India should make a departure from the conventional "atavism" to avail of the achievements of new communication technology through open university system in the field of higher education. We should widen the area of access to higher education and update its societal relevance keeping in view our large target groups in a welfare state like India by promoting open university system.

The seminar was held in twa sessions and the papers presented and discussed were (i) Need for and organization of open university in Bihar; (ii) Open university system and development of education in Bihar; (iii) Development of material production; (iv) The role of student support services in an open university; and (v) Open university system: An Academic necessity.

The seminar was attended by eminent educationists, doctors, engineers and senior civil servants.

मोघिया लोक कथाएं–प्रो० पी० आर० शुक्ल

प्रस्तुत पुस्तक मोघिया उपजनजाति में प्रचलित लोक कथाओं का संकलन है। ये लोक कथाएं शिक्षाप्रद होने के साथ-साथ मनोरंजक, कलात्मक एवं परम्परात्मक हैं। इन्हें भारतीय आदिवासी लोक संस्कृति की अमूल्य धरोहर भी कहा जा सकता है। प्रथम संस्करण: जनवरी 1990, सजिल्द, मूल्य: 200/- रुपये, पृष्ठ: 208, 81-7004-155-4

विवेक प्रकाशन
7-यू.ए. जवाहर नगर, दिल्ली-7

News from Agril. Varsities

White Revolution for Better Living

'White Revolution for better living' was the theme of this year's Annual Kisan Mela organised by the Haryana Agricultural University (HAU) at Hisar recently. HAU scientists during their interaction with the farmers, emphasised diversification of agriculture and technologies which were particularly useful to the small and marginal farmers and labourers. A special feature of the mela was a livestock and poultry show where top quality bulls, murrah buffaloes, cows etc. were put up for sale. Farmers were also exposed to the advantages of rearing non-traditional animals and birds and explained the salient points on rearing of sheep, goat, pigs, quails, ducks, etc.

The visiting farmers were taken round the research farms and showed the bumper standing rabi crops of wheat, gram, raya, sarson, taramira, barseen and fodder crops grown with the latest technology. The new techniques applied in their growing were also explained to them. Dummy demonstration of planning and rearing of kharif crops were also shown.

An agro-industries exhibition proved to be a centre of great attraction to the visiting farmers where 200 stalls were put up by the various departments of the university and outside agencies.

PAU Kisan Mela

The Punjab Agricultural University (PAU) recently organised a two-day Kisan Mela to acquaint the farmers with the latest farm technology In respect of the cultivation and care of ensuing Kharif crops. Inaugurating the Kisan Mela Mr. Nirmal Kumar Mukherjee, Governor of Punjab, said that agricultural progress of Punjab had no parallel in the agricultural history of the world. The credit of this major breakthrough, he said, goes to the energetic and progressive peasantry of Punjab and the new farm technology developed by the agricultural scientists of the PAU. He urged the scientists of the University to conduct research on increasing unemployment in the rural areas and start some new programmes through which the rural youth could get gainful employment.

Dr. Khem Singh Gill, Vice-Chancellor of the PAU while welcoming the Governor and the farmers said that new farm technology, mechanisation and farmers' close contact with the PAU were the major factors responsible for the advent of green revolution in this part of the country. Dr. Gill disclosed that 12 new varieties of different crops have been released for general cultivation. He told that 1 lakh seed packets of new varieties and 15,000 vegetable seed kits would be sold to the farmers in addition to the farm literature during the Kisan Mela. He disclosed that a new Research Station was being established at Makhu in Ferozepur district. He said that another project to produce hybrid seeds of vegetables was being started shortly. Dr. Gill stressed that natural resources like land water and environment should be maintained.

Mr. A.S. Pooni, Financial Commissioner (Development), Punjab said that despite drought and flood conditions in the recent years, the production level of foodgrains did not fall. He appreciated the PAU for holding Kisan Melas which greatly helped the farmers to seek new knowledge about the cultivation of various field crops.

Dr. G.S. Gill. Director of Extension Education of the PAU, said that every effort would be made to remove disparities of crop yield in various districts of the State. He urged the farmers to discuss their problems with the PAU scientists for necessary advice during the Question-Answer Session.

Apart from a big agro-industrial exhibition, various departments of the PAU put up their stalls to educate the farmers about the new varieties of the crops, their cultivation and care. The experts of the University educated the farmers on the judicious use of various farm inputs to diminish the cost of production and to get higher yield of their crops.

The farmers were told about the new variety of Basmati Rice named Pusa Basmati-1 which matures in 140 days and yield about 17 quintals per hectare. This year the University has released a new variety of American Cotton named LH-1134 which has long staple (25.5 mm). It matures in 175 days and its average seed cotton yield is 2708 kg. per hectare. It is the first variety which can be spun 40 to 50 counts. Since it is earlier in maturity, it vacates the fields for timely sowing of wheat.

The College of Home Science arranged special demonstration to educate the farm women about various kitchen appliances, nutritive diets, child care and better home keeping. The Department of Animal Science educated the farmers about care and maintenance of high producing diary animals and conservation of fodder. The

Veterinary College of the University acquainted the farmers with various diseases of farm animals and their treatment. The College of Agricultural Engineering held demonstrations on the use of improvod farm implements. The School of Energy Studies for Agriculture demonstrated various energy saving devices.

AIU News

Training University Administrators

The Association of Indian Universities (AIU) organised a training programme for university administrators from 19th to 24th February 1990.

The objectives of the programme were :

1. To sensitise the participants to :
    - —the need for professionalism in university administration and hence for continuous training and orientation;
    - —the new perspectives and conceptual inputs in higher education in India.
2. To enable the participants to appreciate
    - —the university structure as also its relationship with development and change;
    - —the dynamics of the decision making processes in the university system and the role of the administrators therein.
3. To introduce the participants to the utility of computers in the Management Information System (MIS) of Academic affairs.
4. To acquaint the participants to the first principle of the Management of Change in the University system.

The objectives were sought to be realised through eight broad course components which were : (i) university system in the developmental context; (ii) powers and functions of university bodies; (iii) planning for decision making in academic matters; (iv) curriculum planning in the developmental context; (v) implementation and monitoring of academic decisions; (vi) inter-personal dynamic and inter-departmental linkages; (vii) computers in MIS for academic affairs; and (viii) management of change.

Presentations were made by 14 eminent persons. Dr. Sherly L. Bond, Director, Centre for Higher Education Research & Development, University of Manitoba, came specially for this purpose from Canada and took different session on Management of Change.

The emphasis in the programme was on participation and discussion. There was instense group activity in the form of exercises. The participants framed themselves into three groups who prepared reports on the following :

(i) Activity analysis in relation to planning for decision making;
(ii) Organisational set up in decision making: Problems & Issues pertaining to certain areas and suggestions;
(iii) University system in the context of dynamics of change. A feed back questionnaire was also administered.

Judging from the response the programme was very well received. All the participants expressed their views that (i) a follow up programme after say six months for the same group be organised and (ii) similar programmes at national and regional levels be organised for covering various other aspects of university administration.

Sixteen universities, namely, Aligarh Muslim University, Banaras Hindu University, Calicut University, Jadavpur University, Kerala University, Maharshi Dayanand University, Madurai Kamaraj University, Manipur University, NEHU, Nizam's Institute of Medical Sciences, Poona University, Pondicherry University, Panjab University, Poorvanchal University, Shivaji University and RBS College, Agra had sponsored the participants.

News from UGC

INSAT-1B Programme of UGC

Between 10th April to 16th April, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00. a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

10.4.90

"Synthesis of an Organic Compound"
"Using Audio Visuals"
"ORIS : A Biomedical Industry"

11.4.90

"Sand Replacement Method"

"Test Chart"

"Chemical Nature of Genes - Modern Genetics & Human Welfare"

12.4.90

"Graphics with Microcomputers - I Introduction"

"Sticks in Rhythm"

"Devices of Language"

13.4.90

No Telecast

14.4.90

"Training Body and Mind"

"New Challenges"

15.4.90

No Telecast

16.4.90

"Classical Mechanics - 10 : Conservation of Energy & Momentum"

"Entrepreneurs & Enterprise : Case Study - V"

"War on Rats"

2nd Transmission

12.00 noon to 1.00 p.m.

10.4.90

"Radioactivity - I : Radio Isotopes"

"Learning Through Games"

"Building Eyes"

11.4.90

"Cyclone Resistant Rural Houses"

"The French Revolution"

"Desert Bats"

12.4.90

"Computer Literacy - II : Concept of Programming"

"New Literature in English"

13.4.90

No Telecast

14.4.90

"Hour USA : OMNI - The New Frontier"

"A Door to the Out Doors"

"Pen - Pals"

15.4.90

No Telecast

16.4.90

"Wiring Household Plugs"

"Management Functions and Behaviour - Communication Process"

"Biological Control : A Natural Alternative"

Film Studies Courses at Jadavpur Varsity

The University Grants Commission (UGC) has accepted the proposal of Jadavpur University, Calcutta, to set up a department of Film Studies. The proposed department envisages to conduct B.A. and M.A. courses in film studies with main thrust on the study of cinema in aesthetic, historical and sociological settings including film technology and techniques of film making. The syllabi of the courses include subjects like social context of cinema, film language and theory, fiction and experimental films, film criticism and film making, etc.

The Cardinal Purpose

(*Continued from page 21*)

heritage is still a dynamic organism with inherent seeds of continual self-growth. Max Muller, the famed Indologist paid an eloquent tribute to India thus, while addressing the University of Cambridge once :

"If I were to look over the whole world and find out the country most richly endowed with all the wealth, power and beauty that nature can bestow, in some parts, a very paradise on the earth, I should point to India. If I were asked under what sky the human mind has most fully developed some of its choicest gifts, the most deeply pondered on the greatest problems of life and has found solutions of some of them, I should point to India." Indian culture is rooted in its soul and it places equal emphasis on the development of the intellect and humanistic values. It is against this backdrop that Gandhiji with his philosophical vision went out to meet the world and conquer it not by means of an enchanting utopia, nor in terms of a fanciful idealism but in terms of strenuous practically and immediate relevance.

Democratic socialism would remain an empty phrase and a dry intellectual concept without the necessary moral foundations. "Work is worship and service of man is the service of God" asserted Swami Vivekananda. And Vinobaji told his associates that if one could not find God in society, there is no chance of finding Him in the Himalayas. Having secured your degrees and diplomas you are may be seriously concerned about what is in store for you in the days to come. But you should keep your chin up and face the future with a heart for any challenge. Under no circumstances should you detach yourselves from the essential values of life like self-control tolerance, mutual goodwill and a consideration for others. "Material riches, without toleration and compassion and wisdom," says Pandit Nehru, "may turn to-dust and ashes !" May you cultivate a sense of obligation to your less fortunate brothers and sisters. Traditionally many societies have tended to regard intellectual exercise as noble and physical work as mean. This is a distortion that is both unjust and unwise. Bharati, the people's poet exhorts :

> "Let's learn the laws of the moon : the theory as well
> Of sweeping the street and the narrow lane."

As Tagore says, man's mind is deeper, than the great seas; vaster than the endless space. Man can therefore attain his goals, if only he has an unwavering faith in himself. Let me invigorate your hearts and pep up your spirits with the words of prophetic wisdom of Bharati again :

> "Undying desire will yield all that you need.
> If there be in your heart's depth a desire today.
> It will take shape and be fulfilled the following day ;
> Whatever of good one wills
> With concerted aim of sense, limb and soul
> He shall certainly achieve it."□

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Amarjit Kaur. *Concept of man in contemporary philosophy.* Punjabi. Dr. Wazir Singh, Prof. (Retd.), Department of Religious Studies, Punjabi University, Patiala.

2. Crtiz, Javier Ugaz. *A hermeneutics of symbolic 'spatial' terms Akasa Vyoman, Kha, Sunya and their relation to the 'Centre' Heart, Hrdaya in the Sivaism of Kashmir.* BHU. Prof. L.N. Mishra, Department of Philosophy, Banaras Hindu University, Varanasi.

3. Khanna, Ranjana. *Adwait Vedant tatha ayurved ke naitik evam dharmik vicharon ka tulnatmak adhyayan.* BHU. Dr. L.P. Gupta.

4. Maitra, Madhusudan. *Ethical realism of the recent past : A critical survey from the advaita point of view.* NBU.

5. Pandey, Madhuri. *Yogvasishta tatha divya jeevan : Shri Arvind krit mein chetna ka swaroop.* BHU. Dr. R R. Pandey, Reader, Department of Philosophy, Banaras Hindu University, Varanasi.

6. Parkash Vir. *Meaning in ordinary language philosophy : A critical study of the Wittgensteinian Post-Wittgensteinian conceptions.* Kurukshetra.

7. Vishnu Murthy, N. *Technological impact on human behaviour : A psycho-philosophic study.* Osmania.

8. Vyas, Chandra Shekhar. *Buddhist theory of perception with special reference to Pramanavarttika of Bharmakirti.* BHU. Dr. B.N. Singh, Reader, Department of Philosophy, Banaras Hindu University, Varanasi.

9. Yadav, Harish Chandra. *Sri Vallabhacharya krit sarvanirnaya : Prakaran ka ek sameekshatmak adhyayan.* BHU. Dr. K.N. Mishra, Reader, Department of Philosophy, Banaras Hindu University, Varanasi.

10. Yadav, Kamata Prasad. *The problem of moral freedom with special reference to Nicolai Hartmann.* BHU. Prof. L.N. Sharma, Department of Philosophy, Banaras Hindu University, Varanasi.

Religion

1. Asha Kumari. *Hinduism and Buddhism : A relative study on the basis of the literature of Thailand.* Magadh.

Fine Arts

Sculpture

1. Narzary, Janak Jhankar. *Studies in modern Indian sculpture : An investigation upto independence epoch.* Visva-Bharati. Prof. K. Chakraborty, Department of History of Art, Kala Bhavana, Visva Bharati, Santiniketan.

Drawing & Painting

1. Chakraverty, Anjan. *Landscapes in Indian miniature paintings : A study from 16th to 19th century A.D.* BHU. Dr. T.K. Biswas.

2. Kale, Chandrashekhar] Prabhakar Rao. *Ujjalyani kee murti evam bhitti chitra kala mein "Shiv"* Indira Kala. Dr. U.C. Mishra, Prof., Department of Painting, Indira Kala

Sangit Vishwavidyalaya, Khairagarh.

3. Mangal, Bharati. *Ujjain sthit Bharati Kala Bhavan kee murtiyon ka sameekshatmak adhyayan.* Indira Kala. Dr. U.C. Mishra, Prof., Department of Painting, Indira Kala Sangit Vishwavidyalaya, Khairagarh.

Music

1. Banerji, Kasturi. *Impact of classical music on literary compositions and songs of Rabindranath Tagore, Kazi Nazrul Islam and Atul Prasad Sen.* Indira Kala. Smt. Dipali Nag.

2. Mathur, Nishi. *Uttari sangeet kalakaron per vanshanukram evam vatavaran ka prabhav.* Rajasthan. Dr. Leelawati Adsule, 50, Shalimar Bagh, Near Hira Pura, Ajmer Road, Jaipur.

3. Pant, Deepak Kumar. *Nand Das ke Bharmar Geeton ka sangitik vivechan.* Kurukshetra.

4. Sharma, Bharati. *Gwalior Sambhag ke lokgeet.* Indira Kala. Dr. (Smt.) Anita Sen.

5. Shashi Bala. *A study into relationship of musical preferences with personality traits of the individual : Punjab, Haryana, Delhi and Chandigarh.* Kurukshetra.

6. Zamre, Nalini. *Vedbhariya loksangeetik drishtikonaton adhyayan.* Indira Kala. Dr. (Smt.) Anita Sen.

Language & Literature

English

1. Aravindkumari, P. *Self and society in the novels of Nathanael West.* Kakatiya. Dr. C. Varada Chary, Reader, Department of English, Kakatiya University, Warangal.

2. Bharathi, Surabhi. *Some aspects of the phonology of Hindi and English.* CIEFL. Dr. K.G. Vijayakrishnan, Department of Linguistics and Contemporary English, Central Institute of English and Foreign Languages, Hyderabad.

3. Krishna Murthy, Sarala. *A stylistic analysis of the fictional works of Chinua Achebe and Ngugi Wa Thiong'o.* Bangalore. Dr. M.A. Yadugir, Department of English, Bangalore University, Bangalore.

4. Maniyar, Abdulsattar Khadirsaheb. *C.P. Snow : The novelist of social insights.* Karnatak. Dr. C.R. Yarvintelimath, Reader, Department of Studies in English, Karnatak University, Dharwad.

5. Munir. *Elmer Rice : The humanist perspective in his plays.* BHU. Dr. J.B. Mishra.

6. Pandey, Vinod Kumar. *Contemporary reality in the novels of Anthony Burgess.* BHU. Dr. A.K. Tripathi.

7. Pradhan, Shanta. *Modern elements in Indian English fiction with special reference to the novels of Raja Rao, Anita Desai, and Arun Joshi.* Gauhati. Dr. G.P. Sarma, Reader, Department of English, Gauhati University, Guwahati.

8. Rama Krishna Rao, A. *Image of India in non-fiction with special reference to Nirad C. Chaudhuri, Ved Mehta and V.S. Naipaul.* Osmania.

9. Srivastava, Neelam. *George Orwell : Art and politics* BHU. Dr. R.K. Asthana.

Germae

1. Thirumaleshwar Bhat, N. *Der Gandhi-Geist in Werken Bolls.* Karnatak. Dr. S.B, Shrotri, Prof. and Chairman, Department of Foreign Languages, Karnatak University, Dharwad.

French

1. Ramakrishna, Shantha. *La traduction scientifique et technique : Didactique et pratique.* JNU. Prof. A.M. Kunte. Centre for French Studies, Jawaharlal Nehru University, New Delhi and Dr. J.E. Mannar.

Sanskrit

1. Coande, Pankaj Trimbak. *Dr. Shri B. Varnekranchya Sanskrit sahitya rachna : Ek adhyayan.* Nagpur. Dr. K.R. Joshi, Department of Sanskrit, Nagpur University, Nagpur.

2. Gangopadhyaya, Shivaram. *Shri Shridhar krit Nyaya Kandali sameeshaman.* BHU. Dr. Trinath Sharma, Reader, Department of Vaidic Darshan, Banaras Hindu University, Varanasi.

3. Garg, Kamlesh. *Kalhan kee Rajatarangini mein rajnaitika paristhitiyan.* Delhi.

4. Jain, Santosh Kumar. *Upniti Bhavaprapancha katha : Ek parisheelan.* BHU. Dr. R.P. Dwivedi, Reader, Department of Sanskrit, Banaras Hindu University, Varanasi.

5. Nag, Ilora. *The critical edition of Kalinitya Pujavisesapaddhati with a detailed study.* Calcutta.

6. Pandey, Kiran. *Chandraprabhacharita mahakavya : Ek sahityik adhyayan.* BHU. Dr. K.C. Jain.

7. Pathak, Ram Chandra. *Saursidhantparyalochnam.* BHU. Pt. R.J. Mishra.

8. Ray, Sila. *Prabodhacandrodaya : The Sanskrit allegorical drama and Pilgrim's progress : A comporative approach.* Calcutta.

9. Singh, Reeta Kumari. *Jain sahitya mein Krishna katha ka tulnatmak adhyayan.* BHU. Dr. S.M. Jain.

10. Sita, Oruganti. *Taittiriya pratisakhya vyakhya sarani.* Andhra.

11. Srivastava, Madhuri. *Aitāreyopnishad ka sameekshatmak adhyayan.* BHU. Dr. V. Karnataka.

12. Subbarayudu, K.B *Jeevbrahambhed satyatvasat yatavvimersh.* BHU. Dr. S.S. Shastri.

13. Tripathi, Dinesh Chandra. *Achrayavarrupe Sidhpadanivattamtrikana parisheelnam.* BHU. Pt. Ramadhin Chaturvedi.

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15. Verma, Asha Rani. *Sanskrit sahitya mein kavya-lakshan aur kavya-prayojan.* BHU. Dr. S.L. Jain, Reader, Department of Sanskrit, Banaras Hindu University, Varanasi.

Punjabi

1. Jaskaran Kaur. *Dhani Ram Chatrik dee kavita da alochnatmak adhyayan.* Punjabi. Dr. Narinder Singh Kapoor, Reader, Department of Punjabi, Punjabi University, Patiala.

Hindi

1. Avanindra Kumar. *Laxmi Narayan Misra ke itihasik natakon mein vastu samayojan.* Bangalore. Dr. (Mrs.) Kanti Singh, C/o. Sri V.P. Singh, Chairman, B.D.A. No. /207, 100 Feet Road, H.A.L. IInd Stage, Bangalore.

2. Badal, Mangat Ram. *Chhayavadottar Hindi kavya mein prakriti.* Rajasthan Dr. Radhey Shayam Sharma, Asstt. Prof., Department of Hindi, University of Rajasthan,

Jaipur.

3. Bhatt, Nirupama. *Swatantrayottar Hindi kahani : Anchlikta, swaroop aur prakriya.* Rajasthan. Prof. Surendra Upadhaya, Department of Hindi, Jodhpur University, Jodhpur.

4. Dubey, Bela. *Acharya Ramchandra Shukla, pradye evam mulyankan : Adhyavadhik Hindi suhitya ke chintan ke sandarbh mein.* Ghasidas. Dr. Rammurti Tripathi.

5. Dubey, Pramod Kumar. *Acharya Hajari Prasad Dwivedi ke upanyason mein lalitya parikalpana.* BHU. Dr. S.N. Dwivedi, Reader, Department of Hindi, Banaras Hindu University, Varanasi.

6. Gupta, Narendra. *Bhishma Sahani ke katha sahitya mein pragatisheel chetna.* Rajasthan. Dr. D.P. Gupta, Saria-Sadan, Near Jail Well, Bikaner.

7. Gupta, Sudha. *Jaishankar Prasad kee kavyabhasha mein chayan aur vichalan.* Visva-Bharati. Dr. Siyaram Tiwari, Prof. and Head, Hindi Bhavana, Visva-Bharati, Santiniketan.

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24. Vasundhara. *Nirala ke sahitya mein vyang.* Delhi.

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Bengali

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2. Bhattacharyya, Rama. *A critical appraach to the short stories of Jagdish Chandra Gupta.* Gauhati. Dr. Usharanjan Bhattacharyya, Reader, Department of Bengali, Gauhati university, Guwahati.

3. Mukhopadhyay, Ardhendu. *Adhunik Bangla nataker sanglap : Pariprekshit-O-Mancha, 1940-80.* Calcutta.

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Assamese

1. Mahanta, Swadhinata. *A comparative study of dramas of J.P. Agarwal and Jay Shankar Prasad.* Gauhati. Dr, D. Tiwari, Reader, Department of Hindi, Gauhati University, Guwahati and Dr. Hemanta Kumar Sarma, Prof., Cotton College, Guwahati.

Marathi

1. Kharahe, Rajkumar Purushottam. *Shri Chakradhar Swaminchi kathasrishti : Sanshodhan va sameeksha,* Amravati. Dr. Bhau Mandavkar, Principal, Indira College, Kalamb.

Gujarati

1. Visani, K.D. *The folklore of the Bhopa-Rabartes of Okhamandal.* Saurashtra. Dr. P.T. Patel.

Arabic

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Tamil

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Malayalam

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Kurup : A study. Kerala. Dr. D. Benjamin, Lecturer, Department of Malayalam, University of Kerala, Kariavattom.

Kannada

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Telugu

1. Chidambara Sastry, Annadanam. *Andhra vagmayamu—Hanumatkatha.* Andhra.

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Geography

1. Bandyopadhyay, M.K. *Geomorphological characteristics of the Mayurbhanj Upland of Orissa.* NBU.

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History

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VALLABH VIDYANAGAR 388 120

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3.	Chemistry (Polymer/Material Science)	1	—	—
4.	Sanskrit	1	—	—
B :	Reader each in : (Pay Scale Rs. 3700-5700)			
1.	Statistics	1	—	—
2.	Animal Science	1	—	—
C :	Lecturer each in : (Pay Scale Rs 2200-4000)			
1.	Commerce	1	SC/ST	2
2.	Material Science (Material Processing)	1	—	—
3.	Economics	1	—	—
4.	Sociology	1	SC/ST	3
5.	Statistics	1	—	—
6.	Botany (Preferably Angiosperm & Taxonomy)	1	—	—
7.	Gujarati (Knowledge of Bhashavigyan will be preferred)	1	—	—
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3.	Project Officer (NAEP) (Temporary) (Rs. 2200-4000)	1	—	—
4.	Press Manager (Rs. 2000-3500)	1	SC/ST	3
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R.C. Patel
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Dr. C.L. Kshirsagar
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INDIRA KALA SANGIT VISHWAVIDYALAYA
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Scale of Pay : Professor and Librarian : Rs. 4500-150-5700-200-7300/-; Reader : Rs. 3700-125-4900-150-5700/-; Lecturer : Rs. 2200-75-2800-100-4000/-; Accompanist : Rs. 1290-30-1560-40-2040/-.

Qualifications : For Professor, Librarian, Reader and Lecturer are as prescribed by the University Grants Commission. Details of qualifications for all advertised posts may be obtained from the Registrar. Except the post of Reader-Vocal (Karnataka Music), all posts are permanent and carry CPF benefits and DA/ADA at University rates from time to time. The post of Librarian, Reader in English and Tabla are upto 31-3-1992, but likely to continue. The post of Reader-in Karnataka Vocal Music is upto 21st October, 1992. N.E.T. cleared candidates will get preference.

Appointees will be on probation according to University rules. Retirement age 60 years. **All posts are reserved for Scheduled Castes and Scheduled Tribes, but if SC/ST candidates are not available, the posts will be filled in by general categories.** Prescribed application forms (in six copies) and other details may be obtained from the Registrar sending self-addressed stamped envelope of Rs. 3.80 of 25 x 12 cms. Application fees Rs 25/- for Professor and Librarian; Rs. 20/- for Reader; Rs. 15 for Lecturer; and Rs. 10/- for Accompanist in the form of IPO. Application fees for the candidates of SC/ST will be one fourth. Last date for receipt of prescribed filled-up applications in six copies is 30th April, 1990. No blank prescribed application forms will be sent/supplied by post after 20th April, 1990. No postal delay is accepted. Those who have already applied for any of the posts mentioned above in response to our previous advertisement are also required to apply again.

The University reserves the right to keep vacant any of the advertised posts without assigning reason. Candidates called for interview will be required to come at their own cost. Candidates who are in service must apply THROUGH PROPER CHANNEL.

M.K. Gangajaliwale
REGISTRAR

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

17-B, SRI AUROBINDO MARG,
NEW DELHI-110016

Applications are invited for the following posts :

FELLOW (1 Post) Educational Finance (Rs. 3700-125-4950-150-5700)

(a) Qualifications
Essential

(i) Should have consistently good academic record with first or high second class Master's degree in Education, Social Sciences or disciplines allied to Educational Planning and Administration of an Indian University or an equivalent degree of a foreign university.

(ii) Either a doctorate degree of an Indian or foreign university or equivalent published research work of a high standard or outstanding academic contribution in the field of Educational Finance; and

(iii) At least 5 years experience of teaching/conducting and/or guiding research in field of Educational Finance OR at least 5 years administrative/professional experience in Government in the field of Educational Finance.

(iv) Proven merit in writing/editing/documentation/publication work.

Desirable

Proven expertise in the area of budgeting, auditing, accounting and financial management in Education.

(b) Age Limit : 45 years

ASSOCIATE FELLOW (2 Posts) (Rs. 2200-75-2800-100-4000)

(i) Educational Policy (leave vacancy upto 14-4-1992)

(ii) Educational Planning (leave vacancy upto 18-11-1990)

(a) Qualifications
Essential

A doctoral degree or equivalent published work with First or High Second Class Master's degree in Education, Social Sciences or disciplines allied to educational planning and administration.

Desirable

Some experience in the field of Educational Policy for the first post.

For the second post of Associate Fellow (Educational Planning), preference will be given to candidates possessing Master's Degree in Economics with Quantitative Techniques or Master's Degree in Mathematics/Statistics with adequate background in Planning.

(b) Age Limit : 35 years

Notes : I. For the posts of Fellow and Associate Fellows :

(a) The condition regarding Ph.D. will not apply in case of persons drawn from administrative cadres but there should be evidence of academic and innovative contribution in the field of Educational Planning and Administration. It will be open to persons serving in government departments to join the post on usual deputation terms.

(b) The benefit of added years of service upto a maximum 5 years of qualifying for superannuation pension under rule 30 of CCS (Pension) Rules, 1972 shall be admissible on fulfilment of all the conditions.

II. Candidates for the posts of Associate Fellows shall be eligible for grant of advance increments on UGC pattern.

PUBLICATION ASSISTANT (1 Post) (Rs. 1400-40-1600-50-2300-EB-60-2600)

(a) Qualifications
Essential

(1) Graduate with a Diploma in Printing Technology from a recognised Institution or two years Post-Graduate Diploma in Book Publishing with specialisation in Book Production.

(2) About 2 years experience in Printing/Production of Books/general publications, journals etc. in a reputed Publishing/Printing Organisation or in a Government/Autonomous organisation dealing in printing and publishing.

(3) Knowledge of calculating and estimating cost of production of publications.

(b) Desirable

Proficiency in English and Hindi Proof Reading.

(c) Age Limit : 21-30 years.

All posts carry the usual allowances as are admissible under the Central Government rules. Applications (separate for each post) must be submitted in prescribed form obtainable personally or by sending a self-addressed envelope (size 23 x 11 cms.) with postal stamps worth Re. 1/- affixed thereon. Completed application clearly specifying the post alongwith attested copies of certificates, a recent passport size photograph and a non-refundable crossed postal order of Rs. 8/- (not required in the case of SC/ST candidates) drawn in favour of Registrar, should reach latest by 15th May, 1990.

The prescribed age limit for all the posts shall be reckoned on the closing date i.e. 15th May, 1990. Qualifications and age are relaxable for otherwise well qualified candidates. Candidates from outside Delhi called for interview will be paid single return train second class fare by shortest route. Candidates already in employment in Government/Semi-government Department/Autonomous bodies should send their applications through proper channel. Other things being equal, preference will be given to SC/ST candidates,

R.P. Saxena
REGISTRAR

NATIONAL INSTITUTE OF HYDROLOGY

JAL VIGYAN BHAWAN, ROORKEE

No. 3/90-NIH (Admn) Dated : 19-03-1990

Applications are invited for the following posts in National Institute of Hydrology (A Government of India Society under Ministry of Water Resources), Roorkee from Indian Nationals satisfying qualifications and experience laid down therefor. Five posts are for candidates belonging to general category and ONE POST RESERVED FOR CANDIDATES BELONGING TO SCHEDULED CASTE.

1. Scientist 'E' : 6 posts (likely to be increased) in the following areas : (a) Surface Water Hydrology/Conjunctive Use...4 (b) Drainage/Drought Studies... 1c) Atmospheric Land Surface Process Modelling...1.

Scale of Pay : Rs. 3700-125-4700-150-5000. Total emoluments at the initial of the scale is Rs. 4890/- excluding HRA.

Age : Below 45 years.

Qualifications : Essential : For Area (a) Surface Water Hydrology/Conjunctive Use : ME/M. Tech. in Water Resources/Hydraulics/Irrigation/Hydrology/Soil Water with 60% or 1.0/10.0 CPI in both BE./B. Tech. and ME/M. Tech. Examination.

For Area (b) Drainage/Drought Studies

ME/M. Tech. in Water Resources/Hydraulics/Irrigation/Hydrology/Soil Water with 60% or 7 0/10 0 CPI in both B E./B Tech and ME/M Tech. Examination. OR Ph D. Degree in Physics/Nuclear Physics with 60% or 7.0/10.0 CGPA in M.Sc. Examination.

For Area (c) Atmospheric Land Surface Process Modelling : ME/M. Tech. in Water Resources/Hydraulics/Irrigation/Hydrology/Soil Water with 60% or 7.0/10 0 CPI in both BE/B.Tech and ME/M.Tech Examination. OR Ph D. degree in Physics with 60% or 7 0/10.0 CGPA in M.Sc. Examination.

2. At least 10 years experience in teaching/research/design/investigation and planning of which at least 5 years experience must be at the Scientist-C or equivalent level (Pay Scale of Rs. 3000-4500) with proven ability of conducting and guiding research and with experience in handling applied research problems.

Desirable : 1. Ph.D. in Engineering for Engineering post-graduate and post doctoral work for Ph.D. in Science. 2. Publications in reputed national and international journals. 3. Corporate membership of professional, scientific and engineering associations/societies.

Note 1 : Time spent on Ph D for engineering graduate/post-graduate shall be considered as experience upto a maximum period of 3 years. Note 2 : The qualifications regarding experience is relaxable at the discretion of competent authority in the case of candidates belonging to SC category, if at any stage of selection the competent authority is of the opinion that sufficient number of candidates from this community possessing the requisite qualifications are not likely to be available to fill up the vacancies reserved for them. Note 3 : Selected persons can be appointed on deputation basis also.

The above mentioned posts carry usual allowances as admissible under the Central Govt Rules. Age will be relaxable for persons, already in service in the Institute and other Govt./Semi Govt./Autonomous organisations as well as candidates belonging to SC community, retrenched employees of Defence services and physically handicapped persons, as per rules of the Government of India.

Age will be determined as on May 11, 1990.

Persons already employed in Government/Semi-Govt./Autonomous Bodies should apply through proper channel. Applications not forwarded through proper channel may not be considered.

Candidates applying for more than one area should use separate application form for each area.

Application forms may be obtained by April 16, 1990 from Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhawan, Roorkee-247667 (U.P.) by sending a self-addressed envelope of the size 12 x 28 cms, Application forms duly completed in duplicate with copies of all testimonials alongwith an application fee in the form of Indian Postal Order of Rs 8/- (SC candidates are exempted from payment of fee) payable to the National Institute of Hydrology at the Roorkee University Post Office should reach the Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhawan, Roorkee-247667 (U.P.) on or before May 11, 1990.

JOB LOCATION : ANYWHERE IN INDIA.

Training Programme for University Administrators

Participants at the Training Programme organised by the Association of Indian Universities from February 19-24, 1990.

Tata Institute of Fundamental Research

HOMI BHABHA ROAD, BOMBAY-400005

Advertisement No. 9/90

Applications are invited for Research Scholarships in the School of Mathematics of the Institute from bright young students aspiring for a career of research in mathematics. The Institute provides facilities for active research in Pure Mathematics in an atmosphere of academic excellence.

Qualifications : A good Master's degree in Mathematics is required. However, B.Sc. degree-holders of exceptional merit will also be considered. Students who have just appeared for the relevant examination this year may also apply.

Final selection will be made on the basis of an interview to assess the aptitude for research.

Selected students will be paid an honorarium of Rs. 2200/- per month. The admission will be initially for a period of one year during which introductory courses on basic areas of mathematics will be given. The continuation of the research scholarships beyond one year will depend on the assessment of the student's performance during the year. A second assessment will be made at the end of the second year based on which the student may be offered a further extension of his scholarship at a possibly enhanced level or a Research position for 3-5 years. There are possibilities of research appointments at higher levels for outstanding students after completion of their Ph.D's.

Applications in the form of a resume giving the particulars listed below accompanied by attested copies of testimonials pertaining to the mathematical ability of the candidate from two teachers closely acquainted with the work of the candidate and a recent passport size photograph should reach the Sr. Administrative Officer (Establishment), Tata Institute of Fundamental Research, Homi Bhabha Road, Bombay not later than **June 1, 1990.**

1. Name
2. Date and place of birth
3. Address
4. Nationality
5. Academic qualifications with year of passing, division/class and names of institutions attended. (Attested copies of mark lists should be enclosed).
6. Previous experience, if any, giving designation and the scale of pay, posts held, names and addresses of previous and present employers, number of years served, and present emoluments, in chronological order.
7. Details of published research work, if any.

A candidate called for interview will be paid 1-1/3 railway fares each way by the lowest class as also a sum of Rs. 35/- as halting allowance for the day on which he/she is interviewed. Applicants already in Govt./Semi-Govt./Public Sector Undertaking services must apply through proper channel. Only the candidates who are called for interview will be informed of the results and no correspondence of any kind will be entertained.

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University News

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Linkage Through Entrepreneurship

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Management Theory in Higher Education System

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University Concept of Medical and Health Education

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Computer Assisted Instruction

●

Modern Trends in Music Education

●

Senior Academics Meet

THE UNITED STATES EDUCATIONAL FOUNDATION IN INDIA

'Fulbright House', 12 Hailey Road, New Delhi-110 001

Applications are invited for the following scholarships/fellowships for the 1991-92 academic year :

1. U.S. Government POST-DOCTORAL FELLOWSHIPS for independent research. Scholars permanently employed in colleges, universities and research institutions, with a Ph.D. or equivalent published work are eligible to apply. Available fields : (i) AMERICAN STUDIES, including International Relations, Law, Literature and Art; (ii) EDUCATION (issues relating to the New Education Policy e.g. Distance Education and Curriculum Development at the undergraduate level); (iii) DEVELOPMENT ECONOMICS; (iv) WOMEN'S STUDIES; (v) INFORMATION TECHNOLOGY/LIBRARY SCIENCE; (vi) COMMUNICATION / MEDIA; (vii) ANTHROPOLOGY/SOCIOLOGY; and (viii) ENGLISH TEACHING e.g. English for Special Purposes (ESP)/English for Science and Technology (EST) and Teaching of English as a Foreign Language (TEFL). AGE : below 45 years. Duration : 4-6 months, Last Date : July 13, 1990.

2. Readers and Professors and faculty of equivalent rank in research institutions, with a Ph.D. or equivalent published work, may apply for short-term fellowships. Fields : (i) AMERICAN STUDIES; (ii) WOMEN'S STUDIES; (iii) MANAGEMENT OF EDUCATION/SCIENCE EDUCATION—Interdisciplinary Approaches. AGE : below 55 years. Duration : 3 months. Last Date : July 13, 1990.

3. Senior Post-Doctoral One-Month Grants in American Studies ONLY. AGE : below 55 years. Duration : 30 days. Last Date : July 13, 1990.

4. Hubert H. Humphrey Fellowships for academic study and practical training for managers and administrators at decision making levels in the fields of Agriculture, Planning, Resource Management, Public Health, Public Administration and Drug Abuse (excluding law enforcement), preferably first class both at bachelor's and master's levels with a minimum of five years professional experience. AGE : below 40 years. Duration : 9 months. Last Date : June 8, 1990.

5. U.S. Government PRE-DOCTORAL STUDY GRANTS for scholars registered for a Ph.D. degree in an Indian University in any area of American Studies. AGE : below 40 years. Duration : 6-9 months. Last Date : June 8, 1990.

6. Internships in COMMUNICATION TECHNOLOGY for full-time media professionals with at least three years experience, for a non-degree program, AGE : below 40 years. Duration : 6 months. Last Date : June 8, 1990.

7. Internships in LIBRARY SCIENCE/LIBRARY MANAGEMENT for permanently full-time employed librarians with a post-graduate degree/diploma. AGE : below 45 years. Duration : 6 months. Last Date : June 8, 1990.

8. East-West Centre, Hawaii, PRE-DOCTORAL SCHOLARSHIPS in specified fields. Permanently employed persons with two years of experience in the field of specialization with 55% marks in B.A. and 60% in M.A. are eligible. Age : below 35 years. Duration : one or more years. Last Date : June 8, 1990.

Only persons holding permanent positions are eligible to apply. For details and preliminary application forms, please write to the relevant office of USEFI specifying the program for which application forms are required, giving details of age, class and percentage of marks of all university examinations taken and present position, with a stamped (Rs. 2) self-addressed envelope, size 23 cms. x 10 cms.

USEFI
'Sundeep' 4 New Marine Lines
Bombay 400 020

USEFI
Flat No. 2, Park Mansions
57 Park Street, Calcutta-700 016

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12 Hailey Road,
New Delhi 110 001

USEFI
American Consulate Bldg., Mount Road,
Madras-600 006

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Linkage Through Entrepreneurship

D.C. Surana*

One of the important concerns of the country is to establish nexus between research institutions, universities and higher institutions of learning on one side and industries on the other for effective and efficient utilization of resources in man, money and materials and to accelerate the growth of research and industrial outputs. This has, however, not been achieved on account of mismatches that exist between them. Another equally important anxiety is to enhance employment opportunities for our youth and one way of achieving this is hopefully seen in diverting youth from employment to self employment. There is a third important concern and that is to attain self reliance to reduce the tendency of importing technology thereby conserving foreign exchange. One of the ways of doing it is by using indigenous know-how for industrial development.

The National laboratories developed the know-how over the years and handed it down to industrial enterprises through know-how clearance houses. The industrial houses, in many cases, could not realize the laboratory know-how into gainful industrial production straight away which gave rise to dissatisfaction and discontentment, resulting into disputes. What was aimed to enhance the cooperation between industry and R & D institutions, became the cause of discordance between them. One of the reasons is that the know-how is developed only upto the laboratory level production and is not suitable for industrial production because a vital intermediate step to set up a pilot plant to give out an industrial prototype as against laboratory prototype was missing in the chain of transfer of know-how. The industrialists were disenchanted and prevailed upon the Govt. to permit imports of technology.

Programmes in Entrepreneurship

Attaining of all these objectives viz., the linkages between Research and Development Institutions including institutions of higher education on one side and industry on the other, the attraction for self employment and self reliance using indigenous technology can well be accelerated if postgraduate programmes in entrepreneurship are started in institutes of higher learning with the following inputs :

—Suitable degree holders having inherent qualities of head, heart and risk taking capacity. This can be done through scientific selection of candidates for admission.

—Scholarship/Fellowship to support them for the duration of the programme. This support can be provided by the UGC or Ministry of Human Resource Development, Govt. of India.

—Funds for upgrading an identified lab. know-how to the level of a pilot plant. This can be negotiated with the know-how transferring agencies.

—Funds for acquiring the lab know-how. This can be arranged by financial and investment agencies.

—Funds for obtaining consultancy services of experts. State consultancy organisations can be persuaded to pay for this.

Professor, Deptt. of Electronics & Communication Engineering, Director, Audio Visual Research Centre, University of Jodhpur, and Hony. Secretary, Jodhpur Adult Education Association, Jodhpur.

The formal degree giving entrepreneurship programme may have an academic structure suggested below (see Fig. 1) :

- —A semester is devoted in professional and management courses such as financial management including working capital management-cost accounting-production management, marketing, selling and purchase management-Mercantile Law. The objective of these instructions should be to groom the candidates to produce various documents for the implementation of the project. He is also trained to file applications to obtain facilities, incentives and subsidies offered by the Government, financial, industrial development, investment corporations and other agencies. This semester is to be completed in the university and academic institutions having professional faculties and departments with strong inter-disciplinary base.

- —The second semester is devoted to the analysis and study of the lab. know-how. This work may be carried out in the national laboratories which supply a particular know-how. The design development and the blueprint of the proposed pilot plant is prepared in consultation with Lab. Scientists and experts. This period is also spent to collect global and national information regarding the commercial aspects of the project i.e., the sources of raw materials, their rates, sources of machinery and equipment required, market prices of the product, technical developments taking place, product life cycles, etc.

- —The next two semesters could then be spent to set up the pilot plant followed by studies to prepare various documents particularly the engineering know-how, project, feasibility and viability reports. During this period the candidate is equipped to start his venture for which applications and formalities for land, loan, building, working capital, incentives, subsidies are submitted for obtaining sanctions.

- —On the basis of the evaluation of project report, engineering know-how documents and other reports, the candidate is awarded the degree.

- —The know-how so developed may be the joint property of the candidate and the institute of learning.

Alternatives Available

The alternatives available to the outgoing candidate are the following :

- —He can transfer the know-how to willing entrepreneurs and share the proceeds with others.

PREMISES	ACADEMIC INSTITUTION	NATIONAL LABORATORY	ACADEMIC INSTITUTION
TERM	FIRST SEMESTER	SECOND SEMESTER	ONE YEAR/2 SEMESTERS
	TECHNICAL & MANAGEMENT COURSES	OBTAINING LAB KNOW HOW COLLECTION OF GLOBAL INFORMATION TRENDS: DESIGN DEVELOPMENT & BLUE PRINT OF PILOT PLANT	IMPLEMENTATION OF PILOT PLANTS ANALYSIS & STUDIES OUTCOME IN THE FORM OF REPORTS & DOCUMENTS

Fig. 1. Academic Programme

—He may himself establish the industry in which case he may have to repay the cost of development to the funding agency and the institution on deferred payment basis.

—He may take partners or float a company.

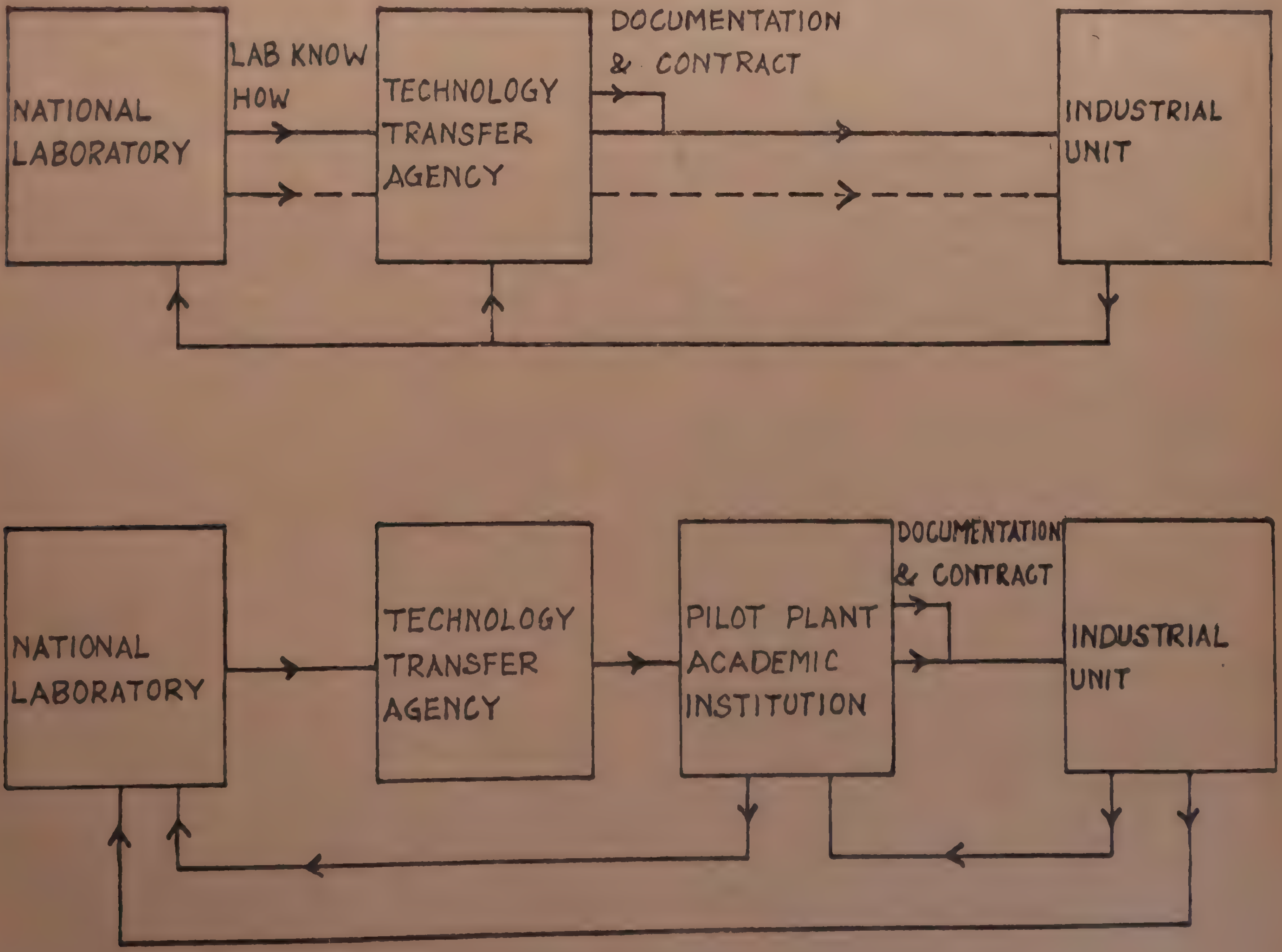
—He may get employed in the enterprise.

Even if he establishes that the know-how is not suitable or competitive for production he may be awarded the degree which could help him to get better employment opportunities.

If at the end of the two years he is unable to complete his work he may submit a report stating reasons and making a request to extend the tenure for another year or submit a report detailing out the suggestions for future work which can pave the way for his followers, if any, to pursue the project for successful completion.

In all cases the candidate stands to gain for he has obtained a degree which has good job orientation and experience to provide him excellent opportunity in the employment market. If he succeeds he can set up his enterprise and be on his own. Through this effort a strong and cordial linkage is established between the industry, the academic institutions and research laboratories as it is all built in this process of know-how transfer and development. This is clearly brought out in Fig. 2.

This is in brief an outline of a possible postgraduate programme in Entrepreneurship Development. The programme would require lot of flexibility for its successful implementation. It would also require some gestation period before it can really take off. ☐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DOCUMENTATION & CONTRACT
INDUSTRIAL UNIT

Fig. 2. Linkages

University Concept of Medical and Health Education

L. Suryanarayana*

Medical and Health Education has to do more with education rather than medicine as education is one of the primary parameters of health for integrated medical care of individuals and society and pedagogic technology is absolutely essential for modern medical teachers in order to adequately meet challenges of modern medical education.

It is numbing to know that most of the Vice Chancellors and senior academicians of general universities of India take a dim view of medical education in the country and quite a few of them perceive medical education as vocational education only involving some skills for treatment of human ills. Some are more perceptive and accept medical education as professional education based on specialist study which offers significant service to society with some intellectual and ethical inputs. But none of them conceive medical education as university level education which can generate new knowledge by integrating principles of applied human biology, sociology, managerial sciences, communication and bio engineering technology, and other disciplines.

Adoption by World Health Organisation the goal of "Health for All by 2000 A.D." and its acceptance by Government of India and medical profession of this country places the responsibility on medical educators of our nation to teach medical students to become agents of social change integrating the disciplines mentioned above including Health Economics and Humanities. This basic shift in the objective is not appreciated not only in the academia of the country but also by the medical teachers themselves. So the learned associations of medical and health education, professional bodies of various specialities of medicine and national regulatory bodies have to become conscious of their responsibility and make the medical teachers appreciate the basic shift in medical education objectives and draft action plan to bring about needed corrections in the curricula at every level of medical and health education. It is also their responsibility to bring this to the notice of the decision makers and see that necessary financial, administrative inputs are provided to medical education. Universities of Health Sciences can be used as "Instruments of Implementation" of this accepted goal.

Deemed Universities of medical education are already in existence in the country. These are the All India Institute of Medical Sciences, Delhi, Postgraduate Institute of Medical Education and Research, Chandigarh, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow and Nizam's Institute of Medical Sciences, Hyderabad. These are institutes of excellence and impart specialist postgraduate and super speciality medical education.

The need for broad based universities of health sciences has arisen because of the basic shift in the goals of medical and health education at graduate level and medical educators are being increasingly asked "for whom and what are we educating our medical students?" This has resulted in realisation that there is a felt need for establishment of universities of health sciences with the objectives of :

1. Integrating needed segments of knowledge of social sciences, managerial sciences, humanities, communication technology and integrating them with applied human biology in curriculum of medical and health education along with encouraging ecologically relevant research.
2. To upgrade and modernise the teaching in medical colleges expected to number about 150 by 2000 A.D. who are training M.B.B.S. graduates and to develop linkages of modern technology of these colleges with about 300 colleges of Indian Systems of Medicine, Homoeopathy and Yoga and Naturopathy.
3. Training needed number of Nurses, para-medical and para health workers and technologists and to develop linkages of their train-

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[Keynote Address to the XXIX Annual Conference of Indian Association for Advancement of Medical Education held at Nagpur on 6th January, 1990 by Lingam Suryanarayana.]

**Vice-Chancellor, University of Health Sciences, Vijayawada-500 005, (Andhra Pradesh).*

ing with physicians from early stages of their training.

4. To evolve credible, objective oriented uniform evaluation mechanisms for admission and certification into all medical and health institutions at various levels i.e., graduates, postgraduates, specialists and other health care providers.
5. To be intermediaries in transfer of (a) knowledge and technology from general universities, and research institutes, and (b) funds from health related industries (British technology group established in 1948 in Great Britain was successful in generating funds for the development of drugs to control cancer, to bring down the level of blood cholesterol and to promote advanced dental cement etc.).

Universities of health/medical sciences can be of three types :

(a) Integrated universities,
(b) Academic, affiliating universities with campus institutions, and
(c) Resource / affiliating universities with resource institutions only.

(a) Integrated universities of health/medical sciences are expected to be responsible for developing and administering the colleges, hospitals and health care systems of a particular geographic area.

(b) Academic, affiliating universities with campus college and affiliated hospitals administering medical care systems in a restricted area.

(c) Resource/affiliating universities to have responsibility for the education process of admission, education, certification and to develop resource and research institutions only.

As the Central and State Governments are contemplating the establishment of health/medical sciences universities on regional or State basis the bast university system suited to our needs will gradually evolve.

The U.G.C. in its discussions about the type of universities of health sciences that can be thought of for our country, requested the University of Health Sciences, Andhra Pradesh to consider whether the university should be a resource university with reference to research and faculty development with medical colleges being made autonomous to develop medical education suited to its geographic location.

The University should serve as a resource centre for its colleges and towards this goal it should also have core faculty of its own, adequate in number and in all disciplines. Such faculty will participate in the academic programmes in the colleges.

The University will have the following Centres to enable it to function as an effective resource centre for its colleges :

(a) Curriculum Development Centre
(b) Staff Development Centre
(c) Examination and Evaluation Reform Centre
(d) Library & Information Centre.

The major focus of all these centres will be the promotion of standards of education in the colleges.

It may have research programmes at the resource centres leading to the award of research degrees. While the colleges will be engaged in undergraduate studies in all the faculties, postgraduate (2nd & 3rd postgraduate courses) teaching will, however, be done in a few selected colleges, where competent faculty and other infrastructural facilities are available. In certain cases, M.Phil and Ph.D., could also be introduced.

University of Health Sciences, Andhra Pradesh while accepting many of the above ideas is of the opinion that it is essential to have a campus college with affiliated hospitals and health institutions to enable the University to implement the ideas it conceives and to test the practicality of pedagogic technologies it evolves.

Many medical teachers cum education administrators raise questions of control if the universities are not endowed with the administrative authority over the medical colleges and take the existing universities of health sciences as experiments which may gradually become not very effective as the medical teachers may not heed the instructions given by a university which has no administrative control over them. Government of India is in the process of finalising national medical/health education policy based on the reports of Shrivastava Committee, Mehta Committee and Bajaj Committee.

A three tier system of organisations of planning, inspecting and implementing may be decided upon.

1. Health Education Commission as an apex body to plan studies in demography, epidemiology, and health manpower development with necessary funding by establishing Medical Grants Commission on the lines of UGC.
2. A bill was introduced in the last Parliament about restructuring the Indian Medical Council and empower it with more authority than before. It will have to be reintroduced in this Parliament again for its consideration. Indian Medical Council will have to be enabled by giving it more financial and organisational inputs to conceive, inspect and enforce the standards of medical education that are required in all the medical colleges of the country.

At present as medical education is in the concurrent list of Central and State Governments, medical colleges can be established by permission of those Governments. This has resulted in permission being obtained by political pressure groups on regional and sectarian basis without any reference to the health manpower needs. Affiliation by the universities and recognition of Indian Medical Council are necessary but in practice it has been found that they will not be denied in the long run inspite of various deficiencies. So the medical education in the country remains institutional and individual based and is not able to meet the situation required to develop medical men and women needed for our country's medical/health care needs.

3. The universities of health/medical education will be made responsible to see that the norms prescribed by the Indian Medical Council are strictly adhered to achieve the objectives of university education presented above.

Most of the medical colleges are utilising the services of temporary, part time, honorary teachers who have no training in pedagogic technology nor knowledge of institutional or national goals of medical education. So the educative process remains defective, evaluation is not credible and no worthwhile research is taking place. If universities of health sciences are established and suitably financed and vested with necessary authority they will be able to evolve institutions of medical teacher training, ecologically relevant medical research and develop integrated medical and health care providers. As long as the present state of affairs having no systematised medical education inspection and implementation of well conceived educational ideas exist there is no hope of providing the needed physicians, nurses, and other health care providers for the medical and health care of majority of our people.

MOTHER TERESA WOMEN'S UNIVERSITY

KODAIKANAL-624 102

NOTIFICATION NO. 60

Applications are invited for

the POST GRADUATE DIPLOMA COURSE IN COMPUTER APPLICATIONS—(P.G.D.C A.) for Women Candidates who have secured a First Class in B.Sc. Mathematics or B.Sc. Physics or B.Com. or any other subjects with Mathematics as ancillary subject at :

The Campus of Mother Teresa Women's University, Kodaikanal.
Madras Study Centre; and
Nagercoil Extension Centre.

Applications in the prescribed form can be obtained from the undersigned on payment of Rs. 15/- by Postal Order along with a self-addressed stamped envelope for Rs. 1.80/- and should reach the Registrar on or before 23rd May, 1990.

REGISTRAR

Management Theory in Higher Education System

Application of Norms

D.K. Ghosh*

Genesis of Management

Historically, the management system itself is not very old. 'When Marx was beginning work on *Das Capital* in the early 1850s, the phenomenon of management was unknown.'[1] Genesis of 'management' lies in the Army model borrowed in 1870, by the big enterprises and the structure began on 'command and control' basis. As Drucker puts it 'The command model, with a very few at the top giving orders and a great many at the bottom obeying them, remained the norm for nearly 100 years.'[2] Drucker adds that 'but it was never as static as its longevity might suggest. On the contrary, it began to change almost at once, as specialized knowledge of all sorts poured into enterprise. The first university-trained engineer in manufacturing industry was hired in Germany in 1867, and within five years, he had built a research department. Other specialities followed suit, and by world war I, the familiar typical functions of a manufacturer had been developed: research and engineering, manufacturing, sales, finance and accounting and a little later, human resources'[3]

Business Enterprises had re-realized that with the effective management system, better productivity and greater efficiency could be achieved for as Drucker observed "....it is management that explains why for the first time in human history, we can employ large number of knowledgeable, skilled people in productive work.'[4] Drucker adds that 'no earlier society could do this. Indeed, no earlier society could support more than a handful of such people because, until, quite recently no one knew how to put people with different skills and knowledge together to achieve common goals.'[5]

Dissimilarity of Education and Industry Situations

When we talk of 'management' in the context of educational institutions and think of applying any theory or norm, it is always the theory approach of management studies based on industrial needs, experience and research for there is no study material available to us that can be said to be relevant to the situations in the educational set-up which have different culture, philosophy and purpose.

Fundamentally, as pre-requisites to successful 'Management', management is crucially important for after all it is with the help of the human resources that the common goal of the organization is to be achieved. In view of this, aspects of man-management need be discussed objectively. It is admitted that certain elements of inherent human factors are common irrespective of the fact—whether it is education or industry sector. However, it is erroneous to apply common norms either for diagnostic or remedial purposes as it needs no argument that the environment in which man works or lives has greater impact than the inherent elements of man. For any objective study and comparison, it is possible to establish a theory only when the objects of the study are drawn from or kept under identical conditions.

Thus, for obvious reasons, the package of the theory of management in general and for man-management in particular of industrial sector cannot *mutatis-mutandis* be extended and applied to our higher education system about which we feel concerned and for which there is now a frantic search to evolve packages to bring about improvements. The reasons are, ONE: industry has a different goal and mandate. What it aims is not the aim of an educational institution; what it does, an institution cannot do that, what it cannot do, an institution can do.

TWO, an industry is a profit-making and money-oriented organization while it is diametrically opposite in the case of an institution of higher learning where 'knowledge' and 'search for truth' are the very basis of existence. Service conditions and physical environments in the industry are so different that one cannot find the two any time at one level and apply the same yardstick for any purpose. While 'firing' with 'hiring', is rather common in industry, an institution even where it can do so, under the existing law, avoids doing that. The reason is so obvious.

As rightly observed by the Kothari Commission 'The character of a University—as a society of teachers and students engaged in the pursuit of learning and discovery, distinguishes fundamentally the regulation of the affairs from, say, the profit-motivated management of commercial concerns.'[6] Even the Commission said that it is different from "...the administration of a Government Department, or

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Registrar, IIT-Bombay.

Municipal Corporation, or a Unit of the Armed Forces.'[7] These observations of the National Education Commission which is the latest official document in the area of education clearly spelt out the distinctive character of the education system from all other systems of country.

However. the Kothari Commission, although it has deliberated on the manpower planning, has not specifically talked about the managerial manpower this paper is discussing in the higher education system. It has while discussing the Public Administrative and Corporate Managerial Manpower observed that 'Whatever may be the particular business of the particular Government Department or Corporation he may be serving, he will find that the business transacted in all of them has become interconnected because of our new system of planning. A basic stock of knowledge of the Constitution and laws of our country, of the working of our national economy as well as our political administrative and cultural institutions, and finally of the objectives and methods of our new system of organising development through five-year plans, has become a required minimum qualifications for the entire national stock of managerial-administrative manpower'[8]. Relevant to the university management, the Commission in its summary of recommendations has mentioned that "Universities should evolve dynamic techniques of management and organisation suited to their special function and purposes".[9]

Existing Situation

Historically, higher education system in India was introduced with borrowed furniture by and from the British system which too was half-hearted for the borrowed pattern that the British adopted was not of Oxford or Cambridge but the adopted pattern of external registration system of the then London University. This was so, for the purpose was to train Indians with some knowledge of English required for the administration of foreign rule in India. In a situation where the basic educational system lacked solid foundation and right objective, for obvious reasons, no attention was paid to develop a viable administration in the universities which began to grow from 1857. But what is more unfortunate is the fact that even in the post-independence period also, hardly any attention has been paid to this much neglected area although it is well over forty-two years.

Over the years, higher education management has become extremely complex and there is no controversy that it has many hazards requiring high management skill. The National Association of College and University Administrators of USA observes "Colleges and Universities are complex organisations of great diversity—and scope, requiring many management skills".[10] There is no denial of the fact that the management is required to face sudden and surcharged situations even for what one may call a trifling matter. Campus politics, intra-personal cliques and conflicts are all contributory factors to the problems of administration. Not infrequently, the management is forced to give instant decisions, and slightest mis-handling of the situation may lead to serious consequences. Decisions in favour of one or the other section may have far reaching effects on future actions of the management.

Inescapably, any failure on the part of the management for timely recruitment of faculty or to provide facilities to students or to make available the laboratory chemicals or equipment, accommodation or other campus facilities have adverse effect on the faculty in their teaching and research activities as also campus life conditions. The same is equally true with the students.

Inherited system of administration that we are practising today is an old one, which is outdated, outmoded and archaic, having lost all relevance both in form and content, to meet the needs of today. While this is true because of which we face difficulties in our day-to-day performance of duties realizing need for changes, hardly any concrete steps are taken to innovate and mould the system. In the existing situation, by and large. we are functioning on a 'fire-fighting' basis. There is no apparatus to prevent the fire; only fighting the fire in whatever manner and extent possible. In this process, much of the energy and time are just wasted leaving no time to think how much we have achieved in our objectives, what are our failures and what should be done to improve the situation.

Man Management : both an art and a science

Man Management is essentially both an art and science. It is an art because in handling men of a large variety, with different social, economic and educational background, no hard and fast rule can work, and therefore application of judgement in the particular case or situation need as much care as an artist would handle his art whether performing or visual. Since the problems that come up for being tackled with greater care would generally not be large, even in a reasonably large institution, every time the individual, because of his background, would demand a particular course of action or tact to handle him. Thus handling of varieties of individuals is certainly an art, perhaps greater than a performing or visual art for a failure in man management may sometime prove disastrous.

It is a science too for basic to successful tackling of man is the need to study the causes of the individuals who project problems to the institution and such study must necessarily be done scientifically and objectively so that in the study, all the elements of causes are properly analysed. Once the analysis becomes dependable for diagnostic purposes, application of remedial measures becomes the act of art. Thus, a scientific analysis of causes and artistic application of remedial measures make the job both an art and science.

Unlike the industry situations, managements of the educational institutions are required to deal with a precious group of the society that is teachers and more importantly the students who are the vulnerable ones in the system. When they have to seek assistance for a number of their routine needs, e.g. scholarships, hostel accommodation, fees, medical, travel concessions, sports and games, examination rules and procedural requirements, results etc., they need be treated with care for while they are vulnerable ones they could be militants and explosive too. In contrast, industries have to deal with the employees who are largely those working on the shop-floor or packing and forwarding units where the emotional aspect certainly is not as dominating as in the educational set-up and hence, the very basic approach becomes different.

Obviously, for man management, we should look into all the problems and go to the roots so that man management optimally contributes to the objectives of the system. In relation to man management, the important bearing is how much one understands his institution, his place and role both as an individual and as a group assigned the responsibilities of providing the right type of facilities for the students and teachers. Hence, larger the number of the right type of individuals in the administration, better will be the positive man management.

In the world of teachers and students, the administrative wing is an integral part and therefore cannot, in the total environment of the educational system, be treated differently. Much of what is considered as 'irritants' in the system can well be removed with the right approach and efficiency of this wing. However, administrative wing cannot alone keep up the system for it is but a service agency and exists as a subsystem of the main system of teacher and taught.

How different are the functionaries of a Business Organisation and of a University. In a Business Organisation, a departmental Manager cannot send an incomplete proposal to his chief and further, he would send the proposal in time for he knows how much time he is expected to give to his senior to consider the proposal. In the rare case, should any of the two requirements be found failing, the senior would not only return the proposal but may pass adverse remarks and may even reprimand. Much against this, if it happens in a university, the Chief, that is, the Vice-Chancellor would handle the matter very differently. Sir Eric Ashby says, "Every University President has had the melancholy experience of being "ear-bashed" by one of his Science Professors who wants a new building, or a computer, or a flock of research assistants, atonce—though all the President needed to do were to get an order-book out of his desk and write an order". He adds that "The request comes with no supporting documents at all or else, it is embedded in thirty pages of irrelevancies typed in single space. It comes (although the Professor never thought of this) along with a score of other similar requests. The President has to transform this ill-prepared brief into a persuasive paragraph for his finance committee, which moots in two days time (and he may well have to do it at midnight, after returning from a Rotary Club dinner). If the Professor fails to get what he wants, he will say the punch has gone out of the president; it will not occur to the professor that he himself is at fault, because he is incapable of coding his request to the president in an appropriate form".

Motivation is important to achieve the objective, through the functionaries. But the motivating factors that may work well in a business organisation, may not have the same result in a University. For a departmental Manager, a rise in perks can work magically to motivate him while the same is not true in the case of a teacher to whom a few perks may not work at all. A teacher may feel motivated with a few new equipment or research assistants or an opportunity to read a paper at a Conference.

Finally, the two basic components of the educational system namely, the teachers and students are altogether different from the clientele of industry or business organization. Even the non-faculty mem-

(*Continued on page 11*)

Computer Assisted Instruction

G. Subramania Pillay*

K. Nachimuthu**

The use of Computer is known to many of us. The versatality of the use of Computer is added by its use to teaching also. Computer has proved to be a powerful media for the teachers to enhance the quality of instruction. It is not just the Computer Technology alone. It is considered to be a revolution in Information Technology. Any lesson material, in any subject can be programmed for Computer Assisted Instruction. Because of the different variety and versatality, Computer Assisted Instruction now serves as an effective instructional media to meet the varied problems of student's learning.

Computer Assisted Instruction is totally an individualised instructional system, but can be used in small groups also. It provides maximum amount of flexibility to the students. It can also provide different types of examples which students may require. The learner can take his own time to learn, because it is individualised instructional situation. The student can choose a content, sequence and the difficulty level of the instruction that he requires. The performance of the learner during the course of instruction and his performance on the test are automatically recorded by the Computer.

Though a knowledge of the computer programming in different computer languages is necessary in programming the Computer Assisted Instruction, a student who wants to work with the computer for his learning need not know either computer languages or programming. He has just to follow the instructions given by the computer. Of course he has to know the basic knowledge about switching on-off, the letters of the keyboard and the minimum operating functions of the keyboard. This is not at all difficult for any student or teacher.

A computer can give options to the learner regarding selection of topics and the difficulty level. Therefore, the learner depending upon his level of entry behaviour and requirement opt for particular instruction. But within the level opted, mastery level achievement is anticipated. The learner can take any amount of time, but till he masters the idea presented and gives correct response to the question asked by the computer, the computer will not present the next learning point. If the student gives wrong answer, the computer responds to it appropriately. It will tell him to try again or instruct him to press some other button in order to get clarifications or detailed presentation of some earlier concepts. This may help the learner to give the correct response to the present question. This is how teaching points are presented one by one to the learner. The computer becomes an interesting medium which is also interactive like a teacher. It will never fail to interact with the students.

Drawing the attention of the learner to a particular point is an important aspect of teaching. A live teacher adopts a number of ways for this. A computer can be programmed in the same way. Computer fliggering is a technique which can be easily introduced in Computer Assisted Instruction. Among the learning points introduced, to receive students' attention, fliggering can be arranged as important terms, concepts, ideas etc. Fliggering by its very nature draws the visual attention towards it. A computer can also, if programmed, produce oral sound. Musical rhythms can also be produced. The same sound effect can be used as a sort of reinforcement in learning. If a learner gives a correct response, an appropriate sound can be produced, accepting the correct answer before a positive reinforcement appears in the monitor. In the same manner an appropriate sound effect for disapproval of the response can also be arranged which will be followed by a verbal feedback appearing in the monitor like Sorry, Try again, Read carefully, etc.

Like a classroom teacher, computer can illustrate the concepts to be taught through manipulated art. Computer graphics can be handy for the programmer to do this. The same graphics can be used for producing different lettering types which will be appropriately used in presenting the lesson. A "text type" which is larger than 14 points and the "display type" which is larger, are the two types normally made use of by a Computer programmer. Again use of different types of graphical display helps to attract the attention of the students on the desired points, concepts, terminologies etc. Again graphics will help present different data of a particular subject into different modes. Suppose, if data are available in

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*Prof. & Head, Dept. of Education,
Madurai Kamaraj University, Madurai.

**Research Assistant, Dept. of Education,
Madurai Kamaraj University, Madurai.

table form, the same can easily be reproduced in the form of different diagrams like bar, pie, histogram etc., without any loss of time.

Computer can help the learner in getting motivation to learn. Computer games are something enjoyable. The learner gets eye-hand coordination, muscle coordination, finger manipulation etc. Computer simulation is a boon to the learner as well as to the teacher. Real life system occurs outside the classroom. To bring such a situation into the classroom is rather difficult or at times dangerous or very expensive and time consuming. The study of genetics through Mendal's breeding expriments, or the experience of running a small business, or the operation of nuclear reactor, learn to drive a motor car and aeroplane etc., are some of the examples. Computer can be used to emulate a real life situation into the classroom which approximate the behaviour of the real system. A classroom teacher can't give this experience to his students otherwise.

Animation is another advantage that can be used while instruction is given through a computer. Difficult concepts can easily be explained through this technique. Complicated probabilistic systems can be easily made clear and understandable by stage by stage development through the technique of animation by a simplified human character, simple language, modulated speech, physical gestures etc. It can command undivided attention of young learners.

Models play a vital role in understanding concepts which may be abstract or concrete. Subjects like mathematics use more of abstract models. Science and technology use concrete models. Computer very quickly, but systematically builds such models if appropriately programmed. Presentation of colouring sensation is also possible. Computer monitor can present different colour displays. They, not only attract the attention of the learner, but also makes the concepts clear. Getting copies out of a computer printer is almost instant. The printer if given commands will get the learner copies. A table, a chart, a graph or important points of discussion can be easily reproduced through the printer. By that way student can continue learning with the help of printout even after he chooses to learn away from the computer. A computer can provide learner with a number of drill and practice without repeating the same material. The pace of learning is controlled by the learner. As the learner learns and his accuracy and speed improve, the excercises can become more difficult. But whenever necessary, it can be made easier also. Mistakes can be detected systematically.

The Computer Assisted Instruction helps the learner in arousing motivation, presenting content systematically and with interest and to give efficient feedback. The Computer Assisted Instruction provides online direct interactive instruction, testing and prescription. The student can be presented with assignments, problems, exercises, reading materials references for readings etc. with the help of computer. By playing computer games, a learner is competing with a computer or in other words he is competing with himself. All this computer can do either at home or at recreation centre or at learning resource centre or at formal classroom or at libraries etc., etc.

We cannot ignore computer and its use to teaching learning process. If we want to keep pace with developed countries, we have to make use of the computer in education. Computers were introduced in the field of education as early as 1960 in our country. Already resource centers were selected for giving training to teachers in computer education. Day by day the number of schools and colleges having computers are increasing. Teachers at all levels should get teaching interest and involvement in making use of the Computer Assisted Instruction. □

MANAGEMENT THEORY IN HIGHER EDUCATION SYSTEM

(*Continued from page 9*)

bers of staff of the educational institution, are different from the employees of the industry or business organization for the obvious reasons of objectives and environment that they have.

Conclusion

With such difference in the two situations can the industry or business based theory of management be applied to the educational situation? While the straight answer is. 'No'. I would say many of the scientific approach of the industry based theory of management can in modified form, be extended to educational situations. But they need be examined carefully before any serious attempt is made. What really need be done is organised research in our setup, prepare adequate number of case studies, evolve the norms that will help deliver the goods and then only the right management theory in educational system can be developed. □

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Convocation

From Scientific Results to Technological Products

"In spite of having separate Science and Technology Policy Resolutions of the Government of India, we are still poor in converting scientific results into technological products and processes", lamented Dr. M.S. Swaminathan, President, International Union for Conservation of Nature and Natural Resources while delivering the Convocation Address at the Third Annual Convocation of the Alagappa University, Karaikudi. "Technology has economic, ecological and equity dimensions and can be developed only jointly by professional scientists and technologists and potential users. We are yet to learn how to convert scientific know-how into technological do-how", he added. Excerpts

True education generates humility and a desire to learn more. "Knowledge is like a sphere in space—the greater its volume the greater is its contact with the unknown"—wrote Pascal. Since you are actively involved in the development and dissemination of new technologies for rural women and men, it would be useful to keep in mind the following advice of Lao-Tse tendered in 700 B.C.

"Go to the people
Live with them
Learn from them
Love them
Start with what they know
Build with what they have
But with the best leaders.
When the work is done
The task accomplished,
The people will say
"We have done this ourselves".

Only such an approach can trigger a self-replicating movement of rural transformation. This was also the message of Gandhiji.

Humility is essential for promoting harmony—harmony between human beings and Nature on the one hand and among human beings themselves, on the other. This is because harmony arises from respect and love for diversity, both cultural and natural. Diversity also provides the raw material for human communities to adapt to change. The loss of each additional gene, species or habitat reduces the available options. This is why the task of conserving biological diversity is an urgent one.

Not all forms of diversity, however, are desirable. The most undesirable form of diversity is gross inequity in economic and social conditions. A recent report of the World Bank states that the highest per capita income of over US $ 27,000 occurs in Switzerland. We are listed among the ten poorest countries in the world, with a per capita income of a little over US $ 300 i.e., 90 times lower than that of the highest income country. A small country like the Netherlands earns more foreign exchange from agricultural exports alone than the value of all exports from our country. Twenty per cent of the world population living in affluent countries consume over 80% of the world's energy. Technology-driven affluence is increasing day by day in the industrialised countries. In contrast, in predominently biomass-based economy like ours we are developing in a manner that the livelihood security of the rural and urban poor is further threatened by environmental degradation. The sustainable life styles of the past are disappearing and in their place highly inequitable systems of living are spreading.

Ancient civilizations have seen Man *in* Nature rather than Man *in* confrontation with Nature. Respect for all forms of life also nourished the roots of equity. Megasthenes, for example, wrote in 300 B.C. "a network of tanks evolved in South India to store water flowing in monsoon. The stored water was equitably distributed for irrigation so that every one could enjoy their fair share of benefit". It is equity in water sharing that promoted cooperation in water saving. Before the colonial rule, villagers would manage their common lands and tanks. Today, the village communities have lost interest in their protection and management. The concept of the commons has changed in undesirable directions at all levels—local, national and global. At the global level we know that both the atmosphere and the Antarctica are under threat. At the national level, the Water Policy Resolution of the Government of India states that water is a national resource and urges a basin approach to water conservation and utilization programmes. Engineers say that 25 to 35 million ha m of water will be available for inter-basin transfer of water in peninsular India. The requisite political commitment for managing water on ecologically sustainable and socially equitable lines is yet to grow.

Land is in a similar situation. Estimates of degraded lands in the country vary. The first official estimate made by the National Commission on Agriculture in 1976 put the figure at 175 million ha—around 60 per cent of the country's land area. The Society for the Promotion of Wasteland Development put the figure at 129 million ha. The State of Forest Report, 1989, based on the visual interpretation of Landsat imagery, gives the figures of actual forest cover at 64.01 million ha. This represents a reduction of 0.19 million ha of forest cover between 1981-83 and 1985-87. The annual rate of reduction of forest cover is thus about 47,500 ha. However, thanks to recent efforts in planting trees, the area under dense forests increased from 36.14 million ha to 37.84 million ha during this period.

About 55 per cent of the land resources of the country is privately owned. About 28 per cent is under the control of the government—22 per cent under the forest departments and 6 per cent under the revenue authorities. About 4 per cent is under the control of panchayats. The poor depend for their daily needs of fuel wood and fodder heavily on non-private land. In the past they had an important part in the sustainable management of such land. These links were severed during the colonial rule and the problem of alienation between local communities and common property resources got accentuated in independent India. Fortunately, there is a growing realisation of the urgent need for restoring the old symbiotic relationship between man and the biosphere. I recently saw a beautiful bird sanctuary at Udhayamarthandapuram in the Thanjavur district, where the local people are taking great interest and pride in the protection of the sanctuary.

I congratulate the Alagappa University for organising a Department of Bank Management. The mutually reinforcing interaction of brain, brawn and bank could lead to the generation of greater opportunities for skilled employment in rural and urban areas, particularly for youth. I would like to plead for added stress to group self-employment in our training and development programmes. TRYSEM Courses are by and large oriented to individual self-employment.

In many cases individual self-employment poses difficulties in making the occupation economically viable. Group self-employment can help to maximise the benefits from the individual strengths and aptitudes of a group of young men and women. Some may be good in marketing and others in production. The Centre for Women's Studies of this University together with the Department of Bank Management could launch pilot projects in a few blocks of the Pasumpon Muthuramalingam District, designed to promote economically viable opportunities for group self-employment. Such projects should involve procedures such as group extension, group credit and group insurance. In such projects, the strengths of each individual member of the group may vary but their collective strength could be considerable. The Department of Computer Applications could launch a programme for the provision of computer aided extension service by educated rural youth. Another area which merits attention particularly from the Department of Bank Management is the incorporation of the principles of ecological economics in developmental banking. Developmental banking is expanding in our country at a fast rate both in its quantitative and qualitative dimensions. Hence, Banks can be at the forefront of the sustainable development movement. For this purpose, they will need staff well versed in the art and science of advancing economic development based on ecological ground rules. I hope the Alagappa University will take the lead in fostering the disciplines of ecological economics and economic ecology.

Our country is fortunate in having the necessary basic infrastructures for organising a national grid of technology blending centres. We have a large number of Universities, national laboratories and industrial R & D establishments. We are a big country with large human and natural resources.

Dr. Frank Press, President of the National Academy of Sciences of the United States, a country which has made spectacular progress in harnessing science and technology for national development, recently lamented at the "failure of the United States to use the new knowledge from research institutions effectively to compete in commercial markets". He gave the following reasons for this situation (National Academy of Sciences, Letters to members, July 1989):

(a) "The poor state of the education system—Ask any manufacturer who is trying to compete on product quality and he will tell you that a major impediment is the 'innumeracy' and poor literacy of the work force,

(b) a system of business management rewards and incentives that places low priority on investing for the longer term success of firms, and

(c) of great importance and not appreciated enough by our political leaders, the need to integrate government economic and technological policies".

If this is what Dr. Frank Press thinks of the US situation, how should we describe ours ? In spite of having separate Science and Technology Policy Resolutions of the Government of India, we are still poor in converting scientific results into technological products and processes. Technology has economic, ecological and equity dimensions and can be developed only jointly by professional scientists and technologists and potential users. We are yet to learn how to convert scientific know-how into technological do-how. This is one of the important tasks facing our Universities and research organisations. This will call for greater University-industry interaction and partnership.

May I also request those who have taken their degrees today to nurture the spirit of science in their day to day work and promote beneficial feedback linkages between Science and Society. Science has been described in a mural on the dome of the National Academy of Sciences of USA as :

> "The pilot of the industry
> Conqueror of disease
> Multiplier of the harvest
> Explorer of the Universe
> Revealer of the Nation's laws, and
> Eternal guide to truth".

We who are privileged to work in the field of science and technology have thus immense opportunities to serve fellow human beings.

Mahatma Gandhi frequently stressed that surplus wealth is a sacred trust which the person of wealth is called to administer. In today's world, the most important wealth is intellectual property—the knowledge, skills and moral fibre of human beings. Universities are the cradles of intellectual property. Those who are gifted with such property in abundance should regard themselves as trustees of such property and utilize them to the best advantage of the economically and ecologically underprivileged sections of the society. ☐

CENTRE FOR SOCIAL STUDIES

SURAT

Two Week Course on Computer Applications in Social Sciences

The Centre for Social Studies, Surat is organising tow-week ICSSR sponsored course on COMPUTER APPLICATIONS IN SOCIAL SCIENCES **from June 4th to June 17th**, 1990. The Course is meant for researchers and university teachers who are engaged in survey-based research and need to deal with analysis and data processing. This course is designed to orient the participants to fundamentals of computer, computer processing, introduction of higher level languages, foundation of data processing, quantification methods, statistical techniques and packages like SPSS, LOTUS, WORDSTAR, etc.

We propose to select 20 participants. Travel (to and fro second class), lodging and boarding will be provided free to the selected participants. Those selected will have to deposit Rs. 100/- as earnest money which is refundable only after full attendance in this course.

Individuals should apply by furnishing the following informations :

1. Name; 2. Address for Communication; 3. Date of birth; 4. Affiliation to Institution/University; 5. Present position/designation; 6. Qualifications; 7. Discipline in which holding an M.Phil/Ph.D. degree with topic and area of enquiry; 8. Your survey research capability in terms of whether you have studied/upto the level studied/whether using or have plans to use; (i) Research Methodology; (ii) Survey Research Methods; (iii) Statistics; (iv) Mathematics; (v) Data Processing Techniques; (vi) Computer packages/programes; 9. Computer language known; 10. Availability of Computer at your Institution; 11. List of your current research projects; 12. Whether travel expenses can be borne by your Institute; and 13. Recommendation of the supervisor or department head (in case of Ph.D./M.Phil students).

Completed application of interested individuals should reach the Course Director, Centre for Social Studies, University Campus, Udhna-Magdalla Road, SURAT-395 007 latest by Monday, **the 30th April, 1990.**

Modern Trends in Music Education

The Department of Music & Dance of the Kurukshetra University organised a UGC sponsored seminar on Modern Trends in Music Education. The seminar was inaugurated by Lt Gen. K. Balaram, Vice-Chancellor of the University. Dr. M. R. Gautam, former Vice-Chancellor of Indira Kala Sangit Vishwavidyalaya presided over the inaugural function while Dr. A.K. Sen, also former Vice-Chancellor of the Vishwavidyalaya delivered the keynote address.

Welcoming the delegates, Dr. (Km) Madhu Bala Saxena, Director of the seminar, outlined the goals and objectives of the Seminar and emphasized the need to focus attention on contemporary innovations in music education which could possibly cast tremendous impact on the form, content and quality of Indian Classical Music.

In his inaugural address Lt. Gen. K. Balaram welcomed the role of science & technology in modern music education, but cautioned against its misapplication in specific instances which mar the quality of music.

Dr. M.R. Gautam in his presidential address pointed out that a new method of imparting Music education had been introduced through a large number of private institutions and recognised colleges, universities, etc. All India Radio, Television, electronic equipments and new technology had also contributed a lot to the modern music education system. While all these facilities, he opined, has made the music education popular and a large number of students were coming out, the qualitative standard of Music seemed to have been lowered, in comparison with the music education provided by the Gharana system earlier. For bringing a balance between the old and new systems of music education, he suggested that there should be no set syllabus, nor any limit on the duration of the courses. This should be left to the teacher and the taught. This may take eight or ten years but after a proper training only a student should be awarded a diploma or degree.

Dr. A.K. Sen in his keynote address focussed on the problems on which consideration by the seminar was required.

The deliberations of the Seminar were held in six sessions. three sessions of paper presentation and discussions, two sessions of lecture demonstrations, and the valedictory session. The topics discussed at the seminar inculded (i) The role of students and teachers in music education; (ii) The training of Thumri ; (iii) Research in Indian Classical Music; (iv) Analytical Study of the Gayaki of Kirana and Jaipur Gharanas; (v) Music Education—Some Modern Experiments; (vi) Psychology of Music; (vii) Some crucial factors in an effective system of Music Education; (viii) The educative role of All India Radio; (ix) A combined study of Gharana education system and modern music education system; (x) Desirability of compositions in Indian Classical Music; (xi) Inter-relationship of Music and Psychology; (xii) The evaluation of role of institutions in music education; and (xiii) Modern Trends in Music education.

After 3 days of deliberations, the following recommendations were made :

(1) There should be a well planned syllabus to be completed in a session and the education system should be based on science and technology. But at the same time the traditional values of Gharana Education System should also be preserved. For this, efforts should be made to invite renowned musicians to provide special coaching to talented students. This system should be based on the system of 'conservatoirs' prevalent in western countries.

(2) The subject of Music should be recognised as a compulsory subject right from primary through middle to higher classes so that the candidates who take admissions in graduate and postgraduate classes may have cultivated mind and due talent for music education. This will also broaden the availability of competent students for Music at the university level.

(3) As far as possible, there should be a uniform syllabi for all classes throughout the North India and the ragas prescribed in the syllabi should be standardised. The U.G.C. may be requested to initiate necessary steps in this direction.

(4) All Heads of the Departments of Music of different universities should exchange proceedings of the Seminars conducted by them. National Newspapers and Music journals should also be used so that the prevailing trends in Music Education could receive adequate publicity.

(5) At the time of admission, alongwith consideration of marks obtained in the previous class, aptitude test must also be made compulsory for students and the two should be given equal (50%) weightage. This may be incorporated in admission rules of all the universities.

(6) There should be uniformity in all the universities regarding M. Phil. course. The UGC may he requested to issue necessary guidelines in this regard.

Diploma Course in Personnel Management

The Kota Open University has launched a Diploma Course in Labour Laws, Industrial Relations and Personnel Management. The course aims at catering to the needs of different segments of the population who desire to improve their qualifications, skill, competence, career prospects, etc. It also desires to provide access to specialised education to in-service or freshers who wish to take it. The entry qualifications for the course has been relaxed.

The general objectives of the course are to train learners for a wide range of profession such as Personnel Expert or a professional Labour Expert or examinees, of competitive examination and others who intend to join any of the related professions. Some of the special features of the course are :

- to provide understanding, skill and elementary knowledge of Labour Laws and Personnel Management.
- to build a strong foundation of knowledge in theory so that he/she can handle the problems in the real life situation.
- to encourage learners to undertake inter-disciplinary courses of study and the research projects.
- in-depth understanding of national and international Labour Laws and Industrial events and their impact on the Indian society.
- to update information of Managers who have received little or on formal training.
- Managers in small companies who cannot afford to be away from the place of work.

Senior Academics Meet

The Academic Staff College (ASC) of Lucknow University recently organised a Conference of Senior Academics at Lucknow. The Conference was inaugurated by Sri B. Satyanarayana Reddy, Governor of Uttar Pradesh and Chancellor of the University. In his inaugural address the Chancellor drew pointed attention to the prevailing ills on University and college campuses and commended the role of the Acadmic Staff Colleges. The Governor-Chancellor recalled the example set by Dr. Radhakrishnan, Dr. Zakir Hussain and Acharya Narendra Dev and exhorted the assembled teachers to consider them as their role-models.

Professor G.D. Sharma of NIEPA, in his keynote address, highlighted the global context of teacher education and focussed on the role of Academic Staff Colleges in the higher education sector. He expressed the hope that similar conferences in different parts of the country will generate the required motivation amongst teachers for larger commitment and dedication.

In the business sessions that followed, the nature and scope of ASC activities were thoroughly discussed and far reaching recommendations made by the Conference to make the Academic Staff Colleges optimally effective and efficient. The Conference endorsed the view that the Academic Staff Colleges were playing an important role and deserved to have the full support of the state governments and directorates of higher education. They should be granted statutory status consistent with their inter-university institute character.

Professor H.K. Awasthi, the Vice-Chancellor, welcomed the guests, and Professor A.K. Srivastava, Director, Academic Staff College proposed a vote of thanks.

Consumer Protection Week Celebrations

The Department of Economics of the Mother Teresa Women's University recently organised the Consumer Protection Week Celebrations. Speaking on the occasion Dr. Mary Josephine Louis, Registrar of the University, pointed out the need for awareness among women regarding consumerism. She said that the consumers had to be cautious about the misleading advertisements and have to develop the habit of saving which will improve the quality of life. Her main emphasis was that 'a value based education' stressing the consumer awareness and sensible spending has to be introduced in schools through a suitably framed curriculum.

Prof. Sampath, Secretary, Consumer Protection Council, Kodaikanal, delivered the keynote address on "Concern for Consumer" and highlighted the unhealthy trade practices of the manufacturers and the sellers. He informed about the existence of Consumer Protection Council at Kodaikanal and emphasised the need to strengthen this council.

Dr. Arul Anees, Reader, Department of Economics spoke about the need for consumer education especially among women and pointed out the different types of exploitation experienced by the consumers due to lack of awareness.

Purvanchal Varsity Introduces MBA

The Purvanchal University has started a 2-year M.B.A. Degree course. Admission to the course shall be open to graduates of any recognised University having a Graduate degree under 10+2+3 scheme or a degree in Agriculture, Technology, Medicine, Education or Law, or a postgraduate degree in any discipline or a Graduate with two years Degree course plus one year Bridge course or any other equivalent course. The candidate must have secured a minimum of 55% Marks at the degree/Postgraduate examination in any discipline.

Admission shall however be made in order of merit on the basis of the results of the Admission Test, Group Discussion and Interview. The initial intake is 530 and the course will be conducted in four semesters.

Refresher Course in Statistics

The Indian Statistical Institute propeses to organise a UGC sponsored Referesher Course in Statistics at the Institute's Calcutta Campus from 11 to 29 June, 1990.

Teachers from Indian universities and colleges which are within the purview of the UGC are eligible for admission to the Refresher Course. The training will mainly consist of exposition of basic concepts and development of study material with special emphasis on the mode of teaching. The following areas are proposed to be covered: (a) Probability theory; (b) Statistical Inference, (c) Sampling Theory and Design of Experiments (d) Stochastic Processes, (e) Matrix Algebra and Multivariate Analysis, and (f) Real Analysis.

This course is primarily designed for teachers working in Eastern India at the level of lecturers. However, applications from other areas will also be entertained in a limited number. The number of participants that will be selected is approximately thirty. Further details and application forms may be obtained from the Course Co-ordinator, UGC Sponsored Refresher Course in Statistics, Division of Theoretical Statistics and Mathematics, Indian Statistical Institute, 203 Barrackpore Trunk Road, Calcutta-700 035. The last date of receipt of application form is 20 April, 1990.

News from Agril. Varsities

HAU Hosts Agronomic Research Project Workshop

Dr. I.P. Abrol, Deputy Director General (Soils, Agronomy and Engineering), ICAR, inaugurated the 19th Workshop of All India Co-ordinated Agronomic Research Project at the College of Agriculture of the Haryana Agricultural University at Hisar recently.

Speaking on the occasion, Dr. Abrol said that, despite several irrigation schemes at the national and state levels, about 70 per cent of the total cultiviable area of the country and 48 per cent of Haryana state was unirrigated and entirely dependent on rain for crop production. With the available know-how, the average yield of different dryland crops was very low and needed to be improved substantially through scientific farming to meet our growing demand of food. He said that in view of the ever changing circumstances, it had become imperative on the part of the scientists to evolve the proper technique with which they could get more and more food from the same piece of land since rainfed areas were also showing signs of stagnation due to lack of appropriate water management techniques.

With regard to problem of soil degradation and environment degradation, Dr. Abrol said that cropping system research programme if implemented appropriately could play an important role in this area. He asked the scientists to generalise their results according to characterisation of soil and climate.

Dr. S.P.S. Karwasra, Director of Research, HAU, who presided over the inaugural session, said that the All India Coordinated Agronomic Research project, since its inception, had undergone changes in its name, objectives and content. In the early fifties it had a beginning with simple fertilizer trials and now the project had taken the shape of a cropping systems research project. This coordinated project had been a major source for a number of important recommendations which the Agricultural Universities/Research Institutes make to the State Department of Agriculture for extension.

Over 150 delegates from all over the country participated in the workshop at which the participants reviewed the research work done in this field so far and finalised the future strategies.

Hybrid Seed Production Project

The Punjab Agricultural University (PAU) was starting a new project for the hybrid seed production of cotton, rice, sunflower, tomato and other vegetables. These hybrid seeds, which were not available in Punjab so far to the farmers, would further push up the yield levels of these crops, revealed Dr. Khem Singh Gill, Vice-Chancellor of the Punjab Agricultural University recently while inaugurating the Regional Kisan Mela at Bathinda. Addressing the large gathering of farmers and farm women he disclosed that University was launching many new programmes for the benefit of south-western area of Punjab comprising the districts of Bathinda, Ferozepur and Faridkot. Dr. Gill further said that the University was importing a cotton picking machine which would be suitably modified to suit the requirements of cotton growers of this cotton belt area.

Dr. Gill said that new varieties of grapes which ripe in September and were suitable for processing, were in the pipeline. He advised the farmers that where sub soil water was not suitable for irrigation, there drip irrigation for orchards was more beneficial as compared to surface irrigation. He laid emphasis on reading the University publications which gave the latest technologies recommended by the University. In the present day agriculture which had reached much precision, the knowledge input was as important as other agricultural inputs like seeds, fertilizer, irrigation etc., he added.

Dr. G.S. Gill, Director of Extension of the PAU, said that farmers should diversify agriculture and take up other subsidiary occupations like bee-keeping, mushroom, cultivation, poultry farming, dairy farming, etc. He advised the farmers to make judicious use of farm inputs so that the soil and environment was not affected adversely. There was still a wide gap in the yield of crops obtained at the research farms and the farmers' fields which needed to be bridged by the farmers by adopting the technologies recommended by the University, he added.

Dr. S.S. Gill, Additional Director of Research (Veterinary and Animal Science) said that for cattle improvement, the farmers should get their cows artifically inseminated. The Government had imported semen of pedigree bulls worth rupees one crore and the artificial insemination centres were providing this facility at rupees ten per dose.

Agrometeorology of Coconut

The Department of Science and Technology (DST), Government of India has sanctioned Rs. 12.84 lakhs to Kerala Agricultural University (KAU) for the implementation of a fully financed research scheme on 'Agrometeorology of coconut and coconut based farming systems in Kerala'.

The project envisages development of crop-weather models which will help in weather based agro-advisories planned under the medium range weather forecasting and development of agrometeorological services by the DST. This is a pioneer project in this field of studies taken up in the state.

The total duration of the project is two years. The project will be implemented under the leadership of Dr. GSLHV Prasada Rao, Associate Professor (Agromet) at the Regional Agricultural Research Station, Pilicode.

Officers

Dr. Khem Singh Gill, Vice-Chancellor of Punjab Agricultural University, recently inaugurated a 10-day training and orientation course for NSS Programme Officers. Speaking on the occasion, Dr. Gill said that National Serviee Scheme (NSS) was a very useful development programme as it kept the students of colleges and universities busy in the service of the people. He observed that the students engaged in this progromme could play a significant role in the rural reconstruction since a majority of our people lived in villages. He urged the trainees to inculcate a sense of discipline, dignity of labour and selfless service among their students. Dr. Gill stressed on adult education and said that the people of the rural areas should be acquainted with the health and sanitation and importance of family planning programme. NSS volunteers should motivate the rural youth to adopt subsidiary occupations to supplement their income and not to hanker after petty jobs he added.

The training course, organised by the Directorate of Students' Welfare (NSS Wing) of the PAU in collaboration with the Training and Orientation Centre, Patiala, was attended by more than 30 participants from all over the state.

We Congratulate . . .

Prof. V.C. Kulandaiswamy, Vice - Chancellor, Anna University and President, AIU, who has been appointed Vice-Chancellor of the Indira Gandhi National Open University.

News from UGC

INSAT-1B Programme of UGC

Between 17th April to 24th April, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

17.4.90

"Transuranium Elements"
"Management of Classroom Teaching"
"Diseases of the Heart"

18.4.90

"Lead Acid Battery—Testing and Evaluation"
"Modern Genetics and Human Welfare—I"

19.4.90

"Graphics with 'Microcomputers—II : User Defined Graphics and Pop-up Menus"
"Glimpses of Girasia Life—I"
"Composed Upon Westminster Bridge"

20.4.90

"Space Communications—Television and Radio Transmission, Reception, Telephony"
"Birds of No Frontier"

21.4.90

"UGC Educational Video Festival—I"
"Women and Sports"
"Handle With Care"

22.4.90

No Telecast

23.4.90

"Classical Mechanics—XI : Angular Momentum Conservation"
"Quality Control"
"Mohni Water Cooperative Society Under Ukai-Kakrapur Project"

24.4.90

"Filtration—A Laboratory Aid—I"
"Teaching as a Career"
"Basic Surgical Techniques"

2nd Transmission

12.00 noon to 1.00 p.m.

17.4.90

"Distillation"
"Correspondence Course — A First Hand Experience"
"Cosmetics"

18.4.90

"Fire Retardant—Thatches"
"Perestroika and Glasnost—Their Impact on Modern Soviet Society"
"Introducing Insects"

BEWARE, THESE ARE FAKE

The University Grants Commission (UGC) has cautioned general public against certain self-styled Universities / Vishwavidyalayas/ Vidyapiths that are giving advertisements in the newspapers for the award of degrees/diplomas for the various Courses such as B.A., B.Com., B.Ed., M.A., M.Ed., M.B.A., L.L.B., Ph.D., D. Litt., Library Science etc. or equivalent thereto under so-called open university scheme. These include: **Maithili University/ Vishwavidyalaya, Darbhanga, (Bihar); Takshila Kendriya Vishwavidyalaya, Uttam Nagar, New Delhi; Mahila Gram Vidyapith/ Vishwavidyalaya (Women's University) Prayag, Allahabad (U P.); Varanseya Sanskrit Vishwavidyalaya, Varanasi, (Uttar Pradesh); Commercial University Ltd , Darya Ganj, New Dehli; Testator Research University, Bodinaya-Kanur (Tamil Nadu); Sree Narayana Open University, Quilon (Kerala); Gandhi Hindi Vidyapith, Prayag, Allahabad (Uttar Pradesh); National University of Electro Complex Homeopathy, Kanpur (Uttar Pradesh); Universitetu Newjerusalem, Kuthuparamba, Cannore (Kerala); World Social Work University, Perunguzhi (Kerala); Netaji Subhash Chandra Bose University (Open University), Achaltal, Aligarh (U.P.); Shrimati Mahadevi Verma Open University, Mughal Sarai (U.P.); and D.D.B. Sanskrit University, Puthur, Trichi (Tamil Nadu).**

These self-styled Universities are neither Universities established by a Central or State Act nor deemed to be Universities under section-3 of the University Grants Commission Act 1956 and as such they are not empowered to award degrees in the terms of the provisions contained under section 22 of the said Act.

The UGC has cautioned that these so-called institutions are not recognised and any one dealing with them for pursuing academic studies for degrees will be doing so at his/her own risk and responsibility.

19.4.90

"Cemputer Literacy—III : Concept of Package"
"The Story of Words—II"

20.4.90

"Chinese Postman Problem"
"Defence Mechanism—III : Fantacy"
"Sand Dunes—The Moving Mountains of Desert"

21.4.90

"Hour USA : OMNI—The New Frontier (Robots)"
"Indian Stick Fighting—I"
"Professor Yash Pal : A Vision of Space and Earth"

22.4.90

No Telecast

23.4 90

"Test Chart"
"The Life of William Shakespeare (Special Programme)"
"Century—3 : Oceans—The Source of Life"

24.4.90

"Home Made Cosmetics—I"
"Educational Technology—The Teleteacher—I"
"Ocular Hygiene and Visual Defects"

MOU on Crystal Centre Signed

A Memorandum of Understanding (MOU) between the University Grants Commission (UGC) and the Anna University, Madras was recently signed in New Delhi for upgradation of the Crystal Growth Centre at the Anna University. The MOU was signed by Prof. Yash Pal, Chairman, UGC and Dr. V.C. Kulandaiswamy, Vice-Chancellor, Anna University. The Commission will provide Rs. 1.5 crore during the Eighth Plan period to the Centre.

In accordance with the MOU, the upgraded Crystal Growth Centre will provide common facility to all universities and research scholars. The Centre will also serve as a field station for universities by conducting Associateships and Visiting Scientists programmes. This will enable universities to use most effectively the facilities available at the Centre. The Centre will promote, guide and coordinate activities of crystal growth and will also develop interface with industries in a planned manner through an enterpreneurship programme.

The Centre will be an autonomous organisation within the Anna University and will have a core academic programme to undertake research on fundamental teaching module at graduate and postgraduate levels and also to undertake teaching and other development activities. There will be a Scientific Advisory Committee with an eminent scientist from outside the University as its Chairman to review the programme and advise its Managing Commitiee.

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Nehru's Temper of Science

Sir,

This is with reference to the article, 'Nehru's Temper of Science' by Mr. Onkar Nath Srivastava in the issues of *University News* dated 5 February, '90. The article is a very apt one and throws a good deal of light on Nehru's temper of science.

Prime Minister Nehru was basically a men of science, and his training in science while he was a student at Trinity College, Cambridge, indeed helped him develop a rational approach. Nehru studied geology and botany, and like Aristotle went from facts or material proofs to ideals (ideas) and dreams rather than like Plato, Aristotle's student and a mathematician, who proceeded in his arguments from ideas to facts.

But this apart, Nehru, fortunately, had a great and long association with Gandhiji, who too was ardently a rational man. It is remarkable that Gandhi, though basically a religious man, was equally a man of scientific temper. Ganahi did not accept Hindu religion (or for that matter any religion) in its accepted form, with its manifold rites and rituals and challenged the established dogmas and divinity of Hindu creed. He did not accept the attributes of divine inspiration in regard to the Vedas and Upnishads and called them man-written. Gandhi rejected the Hindu religious texts and their contents which had not appeal to his mind and rationality. In this case, Gandhi refused to accept untouchability as the Scripture-based, though learned Hindu pandits disagreed with Gandhi and even challenged him saying that untouchability was part of Hinduism.

This rational approach (and an entire way of life) of Gandhiji influenced Nehru tremendously. After his education in science in Europe, if there was any force that influenced Nehru more in his development and sustenance of scientific temper, it was Gandhi's. Nehru could sustain his scientific temper largely because of the amazing impact of modernity of Mahatma Gandhi who wittingly or unwittingly encouraged his (Nehru's) way of thinking. National ethos of the time also helped Nehru to develop rigorous, free and independent thinking very much atuned with scientific approach.

One thing more: before western education and even Gandhi, Nehru had imbibed a deep inspiration from Buddha, Gautama Buddha. whose story of renunciation Nehru loved right from his childhood, and of which he makes a loving reference in his *Discovery of India*. As Nehru grew in years his love for Buddha and Buddha's teaching increased. Buddha was a great force of his time and with centuries his influence gained strength making Buddhism an appealing way of live to intellectuals all over the world. Especially, Buddha's teachings like 'not by birth, but by his conduct alone, does a man become a low caste or a Brahmin' 'victory breeds hatred, for the conquered is unhappy'. But the greatest appeal to Nehru was of Buddha's temper, the temper that vouched for scientific way of investigation. Says Buddha: 'One must not accept my law from reverence, but first try it as gold is tried by fire.' This probably became the corner stone of Nehru's scientific temper.

Yours truly,
N.D. Umrigar
Dept. of English,
PRB Arts & PGR Commerce
College,
Bardoli, Distt. Surat-394-601,

Teaching English—A Fun

Sir,

Having a serious concern with teaching of English in rural area, I viewed the programme entitled 'Teaching English in Rural Area—A Challenge' telecast on 8th Feb., 1990 under UGC programmes, with great curiosity. But the programme not only failed to contribute anything to the viewers' knowledge but it tended miserably to ridicule the very objective of the topic.

Bemoaming the state of English language in rural area seems to have become a popular pastime for the so-called neo-educated Indians. But it is very unfortunate that the teachers who have undertaken the noble task, should themselves have made a fun of it.

Every viewer must have been surprised by mere listening the list of words which are missplett and mispronounced by the rural students. The discussion was so casual and superficial that any group of undergraduates would have made the programme more lively. One of the three participant teachers read out an extensive list of words like 'judge' that are not pronounced properly. He also read out the list of words like 'quality', 'delight', 'night' which are wrongly spelt as 'kwality', 'delite' 'nite', respectively due to the impact of T.V. advertisements. The instances he quoted of the misunderstood words like 'draw' 'beach' are too far-fetched because even the poorest student knows the word 'beach' better than 'bitch'.

Moreover, Prof. Patil and other two teachers should have pointed out the truth that these problems in spellings and pronunciation are indigenous to all Indians (in fact one of them pronounced the word 'pronunciation' in a wrong way as 'pronounciation'!) due to the pull of mother tongue. Another basic thing they should have explained is that Indian languages are syllable-timed whereas English is stress-timed e.g. each letter in Marathi has a definite sound and the letters in a word are read with equal stress, whereas in English a letter has no single definite sound and the stress pattern also varies.

They should have prescribed. concrete measures which the students should take in improving their English. One would expect them to show the way to overcoming the barriers in learning English. e g. they should learn the phonetic symbols (vowels and diphthongs) and practise pronouncing them so as to improve pronunciation of words.

Finally, instead of choosing a serious sounding title, 'Teaching English in Rural Area—A Challenge', it would have been befittingly entitled as 'Teaching English A Fun'.

Yours etc.
Ajit Magdum
Modern College,
Vashi (New Bombay)

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Applications will be issued from 28th March, 1990. Filled-in applications should reach the undersigned on or before 28th April, 1990.

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The Admission Application forms and Prospectus are also available at the Sales Counter, Association of Indian Universities, AIU House, 16 Kotla Marg, New Delhi-110 002; Sales Counter, Andhra Pradesh Bhawan, 1 Ashok Road, New Delhi and also at our following Study Centres on payment of Rs. 10/- through Demand Draft drawn in favour of the Director, School of Correspondence Courses, Andhra University, Waltair-530 003.

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The School has no agents and takes no responsibility for prospectus issued and promises made for admission by any other institution.

Waltair,
Dated : 21-3-1990

Prof. V. Abraham
DIRECTOR

N.B. : The applicants should clearly mention in their requisition that they require "Admission Application Form for Supplementary Batch 1989-90."

Special Note for the Successful Candidates in B.A /B.Com. Entrance Examination of January, 1990.

All the successful candidates in the B.A./B Com. Entrance Examinations held in January, 1990 need not apply for admission application form and prospectus for admission into 1st year degree course. The School will arrange to send the admission application form and prospectus along with the Marks Statement-cum-Eligibility Certificate to such candidates. They have to pay an amount of Rs. 10/- towards the cost of admission application form and prospectus along with the prescribed tuition fee at the time of admission. However, the duly filled-in admission application form along with necessary enclosures including the Demand Draft/Money Order Receipt towards prescribed fee should reach the School of Correspondence Courses on or before the prescribed date.

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertation as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

- The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Abraham, Varghese. *Algebraic theory of semi-groups.* Kerala. Dr. A.R Rajan, Reader, Department of Mathematics. University of Kerala, Kariavattom.

2. Badera, Pushpendra Kumar. *A study in the summability of double Fourier series and allied topics.* Vikram. Dr. G S. Pandey, Prof., and Head, School of Studies in Mathematics, Vikram University, Ujjain.

3. Beohar, Archana. *Approximation of functions by Fourier-Bessel series and its applications.* Vikram. Dr. B.P. Khoti, Prof., Department of Mathematics, Madhav Science College, Ujjain.

4. Beohar, Neha. *A study of approximation problems by Norlund mean of ultraspherical series.* Vikram. Dr. Ashutosh Pathak, Lecturer, School of Studies in Mathematics, Vikram University, Ujjain.

5. Chandra, Dinesh Kumar. *Almost periodic function in abstract spaces.* Vikram. Dr. Vijendra Singh, Reader. School of Studies in Mathematics, Vikram University, Ujjain.

6. Chaturvedi, Krishan Kumar. *Some problems related to topological concepts.* HS Gour. Dr. Ram Prasad, Lecturer, Department of Mathematics and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

7. Gupta, Jainendra Kumar. *A study in the degree of approximation of functions by Fourier-ultraspherical expansion.* Vikram. Dr. Ashutosh Pathak, Lecturer, School of Studies in Mathematics, Vikram University, Ujjain.

8. Gupta, Rajendra Prakash. *Almost periodic functions in 2-spaces.* Vikram. Dr. Vijendra Singh, Reader, School of Studies in Mathematics, Vikram University, Ujjain.

9. Jain, Sanjay Kumar, *A study in the approximation of functions by Laguerre series*, Vikram. Dr. B.K. Beohar, Reader, School of Studies in Mathematics, Vikram University, Ujjain.

10. Katariya, Sunita, *A study of open types of sets and some generalizations of continuous functions*. HS Gour. Dr. Ram Prasad, Lecturer, Department of Mathematics and Statistics, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

11. Kshirsagar, Varsha. *A study of localizatian problems in Fourier series and Jacobi series.* Vikram. Dr. Premchandra, Reader, School of Studies in Mathematics, Vikram University, Ujjain.

12. Malhotra, Rajesh. *A study of fixed point theorems of uniform spaces.* Vikram. Dr. Vijendra Singh, Reader, School of Studies in Mathematics, Vikram University, Ujjain.

13. Parsai, Vibhoj Kumar. *Some problems on fixed point theory.* Dr, Vijendra Singh, Reader, School of Studies in Mathematics, Vikram University, Ujjain.

14. Sohale, Varsha. *Approximation problems for Norlund means Jacobi series.* Vikram. Dr. B.K. Beohar, Reader, School of Studies in Mathematics, Vikram University, Ujjain.

Physics

1. Ambika Devi, K. *Studies on nuclear level studies.* BHU. Prof. J. Rama Reo, Department of Physics, Banaras Hindu University, Varanasi.

2. Arora, Renu. *Study of nucleus-nucleus interactions at ultra-relativistic energies using nuclear emulsions.* Panjub. Prof. V.S. Bhatia and Prof. I.S. Mittra, Department of Physics, Panjab University, Chandigarh.

3. Arun Kumar. *Study of equatorial and tropical waves in the middle atmosphere.* Delhi. Dr. O.P. Nagpal, S.S. College, Alipur, Delhi.

4. Bhagwanti. *Dynamical properties of charged fluids.* Panjab. Dr. K.N. Pathak, Department of Physics, Panjab University, Chandigarh.

5. Bhandari, Rajiv. *Anharmonic effects in solid materials.* Panjab. Dr. V.K. Jindal, Department of Physics, Panjab University, Chandigarh.

6. Chaurasia, Rameshwar. *Measurements of Bremsstrahlung radiation in electron atom collisions.* BHU. Dr. R. Shankar, Department of Physics, Banaras Hindu University, Varanasi.

7. Loganathan, R. *Laser spectroscopy of molecules.* BHU. Prof. S.N. Thakur, Department of Physics, Banaras Hindu University, Varanasi.

8. Misra, Sidharth. *Interaction between astrophysical systems.* Delhi. Dr. N. Panchapakesan, and Prof. V.B. Bhatia, Department of Physics, University of Delhi, Delhi.

9. Mishra, Vibhash Chandra. *Investigations and study on a class of broad band microwave antenna.* BHU. Dr. S.R. Ramasamy, Deputy Director, Defence Electronics Research Laboratory, Hyderabad and Prof. K.K. Dey, Department of Physics, Banaras Hindu University, Varanasi.

10. Mohan Rao, Menoi. *Characterization of composite materials using N.D.I. techniques.* BHU. Dr. S B. Rai, Department of Physics, and Prof. Ravi Prakash, Department of Biotechnology, Banaras Hindu University, Varanasi.

11. Parashar, Nakul. *Optical interference coatings design and fabrication.* Delhi. Dr. Atish Mazumdar, Department of Physics, Delhi College of Engineering, Delhi and Dr. V.V. Shah, National Physical Laboratory, New Delhi.

12. Rasal, Subhash Pandharinath. *Studies on ferroelectric undoped and aluminium oxide, doped casium vanadate and potassium vanadate.* Shivaji. Dr. S H. Chavan, Department of Physics, Shivaji University, Kolhapur.

13. Saini, Krishan Kumar. *The study of high TC doped and undoped TL. Ba. Ca, Cu oxides.* Delhi. Prof. S.P. Tiwari, Department of Physics, University of Delhi, Delhi and Dr. Subhas Chandra, National Physical Laboratory, Delhi.

14. Singh, Aunindra Kumar. *Grand unified theories based on exceptional Lie groups.* Delhi. Dr. R.P. Saxena, Department of Physics, University of Delhi, Delhi and Dr. S.K. Sohi, Khalsa College, University of Delhi, Delhi.

15. Singh, Bhartendu Kumar. *High energy interactions.* BHU. Prof. S.K. Tuli, Department of Physics, Banaras Hindu University, Varanasi.

16. Singh, Dinesh Kumar. *Physics of complex liquids.* BHU. Dr. Jokhan Ram, Department of Physics, Banaras Hindu University, Varanasi.

17. Singh, Mahendra Jit. *Production of highly charged slow-moving recoil ions from heavy ion bombardment.* BHU. Dr. R. Shankar, Department of Physics, Banaras Hindu University, Varanasi.

18. Srivastava, Neelam. *Ion conducting materials an devices.* BHU. Prof. S. Chandra, Department of Physics Banaras Hindu University, Varanasi.

19. Tripathi, Surendra Nath. *Experimental study of heavy ion reactions.* BHU. Prof. S.K. Tuli. Department of Physics, Banaras Hindu University, Varanasi.

20. Vineet Kumar. *Electrolyte interface studies.* BHU. Dr. R.P. Singh, Department of Physics, Banaras Hindu University, Varanasi.

Chemistry

1. Anitha, K.L. *Electrocatalysis of oxygen.* BHU. Dr. R N. Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

2. Arora, Harinder Kaur. *Peptide chemistry and biology.* Delhi. Dr. M. Atreyi, Department of Chemistry, University of Delhi, Delhi and Dr. Santosh Pasha, Council of Scientific and Industrial Research, Bio-chemical Unit, Delhi University Campus, Delhi.

3. Bhattacharya, Debashis *Enzymes in analytical chemistry.* BHU. Dr. A.K. Ghosh, Department of Chemistry, Banaras Hindu University, Varanasi.

4. Bhatti, Balwinder Singh. *Phytochemical studies of Randia tetrasperma, Asparaous racemosus Willd and synthesis of some pheromones.* HP. Dr. S.C. Sharma, Department of Chemistry. Himachal Pradesh University, Shimla.

5. Dhankhar, Kiran Lata. *Complexation behaviour of bio-chemically active ligands.* Delhi. Dr. S.K. Sindhwani, Department of Chemistry, University of Delhi, Delhi.

6. Gopal Rao, Bhavirisetty. *Some thiocarbonic acid derivatives, their determination and analytical uses.* HP. Dr. B.C. Verma, Department of Chemistry, Himachal Pradesh University, Shimla.

7. Gupta, Vijay. *Preparation and characterisation of some organo-selenium and organotellurium compounds.* Panjab. Dr. K K. Bhasin, Department of Chemistry. Panjab University, Chandigarh.

8. Kulkarni, Dhananjaya Dhondopant. *Tissue culture studies in grain legumes i e. pigeon-pea.* Shivaji. Dr. K.V. Krishnamurthy, Division of Biochemical Sciences, National Chemical Laboratory, Pune.

9. Padhi, Swapna. *Studies in electro-organic synthesis.* BHU. Dr. R.A. Mishra, Department of Chemistry, Banaras Hindu University, Varanasi.

10. Pathak, Dharmendra Kumar. *Electrochemical synthesis of organic compounds.* BHU. Dr. R A. Mishra, Department of Chemistry. Banaras Hindu University, Varanasi.

11. Patil, Nathaji Baburao Kadam. *Extraction and separation studies of some selected elements: Use of liquid anion exchangers.* Shivaji. Dr. M.B. Chavan, **Department of** Chemistry, Shivaji University, Kolhapur.

12. Pradeep Kumar. *Methods for the determination of hydrazino function and their applications in pharmaceutical analysis.* HP. Dr. B C. Varma, Department of Chemistry, Himachal Pradesh University, Shimla.

13. Raman Rani. *Synthetic studies in some insect growth regulators.* HP. Dr. R.K Mahajan, Department of Chemistry, Himachal Pradesh University, Shimla.

14. Samuel, Suresh. *Electrochemistry of mixed oxides.* BHU. Dr. R.N. Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

15. Singh, Ambika. *Chemical investigation of medicinal*

plants. BHU. Dr. V.J, Tripathi, Department of Chemistry, Banaras Hindu University, Varanasi.

16. Singh, Manoj Kumar. *Stereochemical studies of Diels-Alder adducts.* BHU. Dr. R.M. Singh, Department of Chemistry, Banaras Hindu University, Varanasi.

17. Singh, Sudha. *Synthesis and stereo-chemistry of metal chelates of sulphur ligands.* BHU. Prof. V.D. Gupta, Department of Chemistry, Banaras Hindu University, Varanasi.

18. Thaper, Sadhana. *Natural product syntheses : Syntheses of some insect sex pheromones and structurally related compounds.* Panjab.

Earth Sciences

1. Dandi, Hari Raj. *Structural and metamorphic history of Barot : Jhatingri Area of District Mandi, Himachal Pradesh, India.* Panjab. Prof. R.C. Kanwar, and Dr. Naval Kishore, Department of Geology, Panjab University, Chandigarh.

2. Jaiswal, Rama Shanker. *Geochemical studies of Panjal volcanics of Srinagar (J & K).* BHU. Prof. S.G. Karkare, Department of Geology, Banaras Hindu University, Varanasi.

3. Singh, Anand Prakash. *Applications of catastrophe theory to global bio-geo-events.* BHU. Dr. J.G. Negi, Deputy Director, NGRI, Hyderabad and Prof. T. Lal, Department of Geophysics, Banaras Hindu University, Varanasi.

Engineering & Technology

1. Amar Nath. *High alumina cement and refractary product.* BHU. Dr. V.K. Singh, Department of Ceramic Engineering, Banaras Hindu University, Varanasi.

2. Dubey, Rajendra Kumar. *Constitutive behaviour of the coal measure strata.* BHU, Dr. J.G. Singh, Department of Mining Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

3. Dwivedi, Awadhesh Kumar. *Utilization of industrial waste.* BHU. Prof. P. Mishra, Deparrment of Chemical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

4. Gadgil, Jayant Mahadeo. *An investigation into the air pollution problems due to lagoons.* Shivaji. Dr. B, Subba Rao, Prof and Head, Walchand College of Engineering, Vishrambag, Sangli.

5. Karthikeyan, S. *Artificial intelligence in medicine.* BHU. Prof. Ravi Prakash, Department of Bio-medical Engineering, Institute of Technology, Banaras Hindu University, Varansi.

6. Madan, Sunil Raj. *Studies on structural analysis and synthesis of kinematic chains and mechanism.* Vikram. Dr. A.G. Amboker, Prof., S.G.S.I.T.S., Indore and Dr. R.C. Jain, Reader, Department of Mechanical Engineering, Govt. Engineering College, Ujjain.

7. Moyalan, Johnson Paul. *Studies on effect of granulometry of sinter on its quality and productivity.* BHU. Dr. T.M. Srinivasan, Principal Research Manager and I/c MB and A Group, RDCIS/SAIL, Ranchi and Prof. R.C. Gupta, Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

8. Muraleedharan Pillai, T.K. *Expert system for managerial decision making,* Kerala. Dr. B. Narayanan Nair, Member, Technical Staff, ER & DC, Velleyambalam, Thiruvananthapuram.

9. Singh, Anil Kumar. *Physico-chemical studies on materials prepared through sol-gel route.* BHU. Dr. S.P. Singh, Department of Ceramic Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

10. Singh, Awadhesh Kumar. *Shear strength and soil cement of shallow foundation.* BHU. Dr. Virendra Singh, Department of Civil Engineering, Institute of Technology, Banaras Hindu University, Varanasi,

11. Singh, Vipin Bihari. *Inorganic waste treatment of metallurgical industries.* BHU Dr. K.K. Srivastava, Department of Chemical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

12. Venkatraman, B. *Wear and friction behaviour of materials.* BHU. Dr. G. Sundararajan, Sc 'D' D.M.R.C. Hyderabad and Dr. Deo Nath, Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

BIOLOGICAL SCIENCES

Anthropology

1. Sharma, Subhash. *A morphological and metrical study of the human sternum.* Panjab. Dr. Inderjit Dewan, Emeritus Prof, Department of Anatomy, PGI, Chandigarh and Dr. S. Parkash, Department of Anthropology, Panjab University, Chandigarh.

Microbiology

1. Bajekal, Shyam Shivanand. *Studies on salt tolerant root nodule bacteria from wild legumes growing along the Ratnagiri sea coast.* Shivaji. Dr. M.B. Gandhi, Department of Microbiology, Y.C. College of Science, Karad.

2. Bhatt, Arvind Kumar. *Biodegradation of physicochemically treated forest biomass by xylanolytic micro-organisms.* HP. Dr. Hari Om Agrawal, Department of Bio Sciences, Himachal Pradesh University, Shimla.

3. Venugopalan Nair, D. *Utilization of gaseous aikanes by bacteria.* Panjab. Dr. Tapan Chakrabarti, Scientist 'E', Institute of Microbial Technology, Sector 39-A, Chandigarh.

Biochemistry

1. Kushwaha, Rajendra. Kumar. *Effect of some uramic toxins on RBC membrane haemolysis with special reference to biochemical changes.* BHU. Dr. H.P. Pandey, Department of Biochemistry, Banaras Hindu University, Varanasi and Dr. K K. Tripathi, Department of Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

2. Mohindroo, Anjali. *Studies on arterial wall lipid metabolising enzymes involved in atherosclerosis induced by cholesterol and adrenaline in rhesus monkeys.* Panjab. Prof. Pushpa Ahluwalia, Department of Biochemistry, Panjab University, Chandigarh and Dr. D. Kaul, Department of Exp. Medicine, P.G.I., Chandigarh.

3. Purnima. *Biochemistry of orpiment toxicity.* Panjab. Dr. Rajeshwar Sharma, Department of Biochemistry, Panjab University, Chandigarh.

4. Rajesh Kumar. *Biochemical studies on the mechanism of action of isatins-potent anticonvulsants.* Panjab. Dr R.C. Bansal, and Dr. Akhtar Mahmood, Department of Biochemistry, Panjab University, Chandigarh.

5. Singh, Ajai Kumar. *Salt stress metabolism in rice.*

BHU. Dr. R.S. Dubey, Department of Biochemistry, Banaras Hindu University, Varanasi.

6. Ushakumary, B. *Bio-chemical and histological changes in tannin induced normal and anaemic experimental animals.* Kerala. Dr. N.R. Vijayalakshmi, Department of Bio-Chemistry, University of Kerala, Kariavattom,

Botany

1. Aniridhan, K. *Cytological investigation of sterculiaceae and Tiliaceae.* Kerala. Dr. K V. Bhavanandan, Reader, Department of Botany, University of Kerala. Kariavattom.

2. Anitha, L. *Evaluation of the effects of inorganic fertilizers in plants.* Kerala. Dr. Susan Abraham, Prof., Department of Botany, University of Kerala, Kariavattom.

3. Chaturvedi, Ratnesh. *Clonal propagation of tropical trees.* BHU. Dr. V.S. Jaiswal, Department of Botany, Banaras Hindu University, Varanasi.

4. Chaturvedi, Shiva Shanker. *Ecology of stressed habitats.* BHU. Prof. R.S. Ambasht, Department of Botany, Banaras Hindu University, Varanasi.

5. Deshmukh, Prafull Ganpatrao. *Studies in fossil plants from Andhra Pradesh.* Shivaji. Dr. B.A. Vagyani, Department of Botany, Shivaji University, Kolhapur.

6. Dhami, Neelam. *Studies on the role of some ascomycetous fungi in the bio-degradation of biomass.* Panjab. Prof. C.L. Mandahar, Department of Botany, Panjab University, Chandigarh.

7. Dubey, Rajeev Kumar. *Fungi associated with bank of some forest timber trees and their role in better decomposition.* BHU. Prof. R,S. Dwivedi, Department of Botany, Banaras Hindu University, Varanasi.

8. Gupta, Gunjita. *Ecopathology of plant pathogens.* BHU. Prof. Bharat Rai, Department of Botany, Banaras Hindu University, Varanasi and Dr. (Mrs.) S. Jariwala, MMV, BHU.

9. Kore, Basavaraj Appasaheb. *Herbicidal action on physiology of Parthenium hysterophorus Linn, a menacing weed.* Shivaji, Dr. T.M. Patil, Department of Botany, Shivaji University, Kolhapur.

10. Mishra, Ajay. *Field level evaluation of ultrovialet-B effects on freshwater algae.* BHU. Prof. H.D, Kumar, Department of Botany, Banaras Hindu University, Varanasi.

11. Pandey, Ved Prakash. *Seed health testing and seed-born fungi of some crop plants.* BHU. Prof. R.S. Dwivedi, Department of Botany, Banaras Hindu University, Varanasi.

12. Pant, Anjana. *Cyanobacterial response to heavy metals.* BHU. Dr. S.P. Singh, Department of Botany, Banaras Hindu University, Varanasi.

13. Patil, Kumar Shamgonda. *Cytotaxonomical and genetical studies in Araceae from Western Ghats of Maharashtra.* Shivaji. Dr. G.B. Dixit, Department of Botany, Shivaji University, Kolhapur.

14. Rageesh, M.D. *Physiology and biochemistry of cyanobecteria.* BHU. Dr. A.K. Rai, Department of Botany, Banaras Hindu University, Varanasi.

15. Sharma, Lalan Kumar. *Physiology and ecology of alkalophilic cyanobacteria.* BHU. Prof. H.D. Kumar, Department of Botany, Banaras Hindu University, Varanasi.

16. Sharma, Chhaya. *A study of mineral constituents of some Indian bryophtes in relation to their supoorting substrata and other environmental conditions.* Panjab. Prof. S.S. Kumar, Department of Botany, Panjab University, Chandigarh and Prof. M L. Sharma, Department of Botany, Panjab University, Chandigarh.

17. Sidhu, Devinderjit Singh, *Studies on fungal plant diseases of Chandigarh (U.T.)* Panjab Prof. C.L. Mandahar. Department of Botany, Panjab University, Chandigarh.

18. Singh, Alka. *Physiological studies of deep water cyanobacteria.* BHU. Dr. D.N. Tiwari, Department of Botany, Banaras Hindu University, Varanasi.

19. Singh, Charu. *Algal physiology and biochemistry.* BHU. Dr. S N. Tripathi, Department of Botany, Banaras Hindu University, Varanasi,

20. Soniya, E.V. *Studies on factors affecting somaclonal variations in vitro cultures and their genetic significance.* Kerala. Dr. Susan Abraham, Prof, and Dr. G.M. Nair, Reader, Department of Botany, University of Kerala, Kariavattom.

21. Thomass, Elizabeth. *Legume tissue culture selection of cell lines for amino acid over production and salinity tolerance.* Kerala. Dr. G.M. Nair, Reader, Department of Botany, University of Kerala, Kariavattom.

22. Thomas, Jiji. *Studies on the effect of extracts of aromatic plants on fungal growth.* Kerala. Dr. T.A. Abraham, Reader, Department of Botany, University of Kerala, Kariavattom.

23. Vaidya, Neera. *Cytological studies in Indian orchids : Population analysis and evolutionary trends in some polymorphic taxa,* Panjab. Prof. S P. Vij, Department of Botany, Panjab University, Chandigarh.

24. Veena. Structure and properties of root wood in blue pine. *Pinus Wallichiana A.B, Jacks.* HP. Dr. M.K. Seth, Department of Bio-Sciences, Himachal Pradesh University, Shimla.

Agriculture

1. Batta, Anju. *Utilization of apple pomace for the production of chemicals and fuel.* HP. Dr. T.C. Bhalla, Department of Bio-Sciences, Himachal Pradesh University, Shimla.

Zoology

1. Dixit, Anil. *Effects of some antifertility drugs on the pituitary gonads and adrenals of male five striped palm squirel, Punambulus pennanti (Wroughton),* Devi Ahilya. Dr. Rampal Singh, Prof, Department of Zoology, Holkar Science College, Indore.

2. Dubey, Sunanda. *Pineal adrenal relationship in birds.* BHU. Dr. C. Haldar, Department of Zoology, Banaras Hindu University, Varanasi.

3. Fernandez, Leena. *Studies on chemotherapeutic and histopathological aspects of the X anthelmintic activity of a albendazole, levamisole and pyrantel pamote in experimental Hymenolepis nana infection in a albinomice.* Devi Ahilya. Dr. (Mrs.) P. Kashedikar, Asstt. Prof., Department of Zoology, Holkar Science College, Indore.

4. Manju Bala. *Behaviour genetics of drosophila,* BHU. Dr. B.N. Singh, Department of Zoology, Banaras Hindu University, Varanasi.

5. Packiri-Semi. C. *Studies on hybrid dysgenesis in Drosophila.* BHU. Dr. B N. Singh, Department of Zoology, Banaras Hindu University, Varanasi.

6. Shavali, Shaik Shaik, *Thyroid relationship in a seasonally breeder tropical zone rodent, F. penenti.* BHU. Dr.

C. Halder, Department of Zoology, Banaras Hindu University, Varanasi.

7. Veerabhadra Rao, Nittala. *Studies on hormonal regulation of oocyte maturation in the catfish, Clarias betrachus* BHU. Dr. Shamim Halder, Department of Zoology, Banaras. Hindu University, Varanasi.

Medical Sciences

1. Bhattacharyya, Moitreyee. *Studies on solid dosage formula of piroxicam.* BHU. Dr. J,K. Pandit, Department of Pharmaceutics, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

2. Ganga, S. *Transdermal delivery of model drugs by iontophoresis.* BHU. Dr. J. Singh, Department of Pharmaceutics, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

3 Ganguly, Nandita. *Targeting of adriamycin loaded albumin microspheres in cancer chemotherapy.* BHU. Dr. Jagdish Singh, Department of Pharmaceutics, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

4. Hosseinzadeh, Eissa. *Computer application in health system.* BHU. Prof. V.M. Gupta, Department of Preventive and Social Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

5. Kumar, Asha. *Vaidic vangmay me prasuti tantra evam stri rog.* BHU. Prof. (Miss) P.V. Tiwari. Department of Prasuti Tantra, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

6. Malairajan, P. *Chemical studies on some medicinal plants.* BHU. Dr. P.V. Sharma, Department of Medical Chemistry, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

7. Manickam, M. *Chemistry of plants products.* BHU. Prof. A B. Ray, Department of Medicinal Chemistry, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

8. Ojha, Shashi Bala. *Sanskrit evam ayurved sahitya me dharmabhudya mahakavya ke samikshatmak adhyayan.* BHU. Dr. L.P. Gupta, Department of Basic Principles, Institute of Medical Sciences, Banaras Hindu University, Varanasi and Dr. R.P. Dwivedi, Department of Sanskrit, Banaras Hindu University, Varanasi.

9. Pandey, Savita. *Biomembrane phenomena.* BHU. Dr. Y.B. Tripathi, Department of Medicinal Chemistry, Banaras Hindu University, Varanasi.

10. Surekha, B. Uma. *Controlled release drug delivery systems of captopril using cellulose derivatives.* BHU. Dr. S.B. Jaiswal, Department of Pharmaceutics, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

11. Swain, Sahadev. *A study of referral system in maternal and child health care in India.* BHU. Prof. Amod Prakash, Department of Obstetrics and Gynaecology, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

12. Tripathi, Arvind Kumar. *Psychological personality in neurological disorders.* BHU. Prof. Jyotir Mitra, and Prof. G.P. Debey, Department of Basic Principles, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

13. Tripathi, Vijaya Narayan. *Jana jivan par tridosa pancabhuta evam nava-graha ka prabhava.* BHU. Dr. L.D. Dwivedi, Department of Ayurveda Samhita, Institute of Medical Sciences, Banaras Hindu University, Varanasi,

14. Upadhyaya, Usha. *Swasthya ke liye upoyogi ahar dravyon ka adhyayan.* BHU. Dr. V.K. Joshi, Department of Dravya Guna, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

15. Vasanthi, N.S. *Influence of changing cultural practices on health behaviour tribal population at Jamshedpur.* BHU. Dr. D C.S. Reddy, Department of Preventive and Social Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

Animal Husbandry

1. Rana, Kuldeep Singh, *Effect of irradiation on haematology and haemopoietic organs of chick, Gallus domesticus.* HP. Dr. (Mrs.) Neena Malhotra, Department of Bio-Sciences, Himachal Pradesh University, Shimla.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Babu Sundar, S. *Some lattice problems in fuzzy set theory and fuzzy topology.* CUST. Dr. T. Thrivikraman, Prof., Department of Mathematics and Statistics, Cochin University of Science and Technology, Cochin.

2. Baij Nath. *Some investigations in fractional programming minimax programming and multicriteria decision theory.* BHU. Prof. S.N. Lal, Department of Mathematics, Banaras Hindu University, Varanasi,

3. Gulati, Kanwar Kumar. *On some measures of entropy in information theory.* Delhi.

4. Gupta, Mukul. *A study of basic hypergeometric identities and their applications.* Rajasthan. Dr. R.P. Agrawal, B-1/201, Nirala Nagar, Lucknow.

5. Katyar, Narain Prasad. *Estimation of papulation parameters using auxiliary/apriori information.* Durgawati. Prof. Lal Chand, Head, Department of Statistics and Mathematics, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur.

6. Kishan Chand. *A study on error locating codes.* Rajasthan. Dr. S.D. Misra, Department of Mathematics, University of Rajasthan, Jaipur.

7. Louis, R. John. *Studies in near triple systems.* Madurai.

8. Mahboob Zafar Alam. *Study on fuzzy set theory and its applications.* Magadh.

9. Sarmah, Bishwa Ram. *A study of flow and heat transfer problems through porous media.* Dibrugarh. Dr. A.C. Srivastava, Prof., Department of Muthematics, Dibrugarh University, Dibrugarh.

10. Shanmugam, T.N. *Studies an analytic functions with special reference to integral operator.* Anna. Dr. Ponnam-

mal Natarajan, Asst. Prof.. Department of Mathematics, College of Engineering, Madras.

11. Sudharsan, R. *Certain problems in imperfect fluid cosmology*. IIT, Madras. Dr. V.B. Iohri, Prof., Department of Mathematics, Indian Institute of Technology, Madras.

12. Tiwari, B.C. *Radiating fluid balls in general relativity*. Kumaun. Dr. D.N. Pant.

13. Tripathi, Durga Dutt. *Geometrical characterizations and physical behaviour of MFD flows*. BHU. Dr. Ram Babu.

Statistics

1. Ravichandran, J. *Inference based on conditional specification in two-stage unbalanced uested design*. Nagarjuna.

Physics

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(b) Candidates with M.Tech./M.E. or equivalent degree will be eligible for scholarship @ Rs. 2400/- per month as per rules of the Institute.

2. MASTER OF TECHNOLOGY (Full-time, Sponsored and Part-time)

M.Tech. Programmes are offered by the following Departments/Centres.

Applied Mechanics, Chemical Engineering, Chemistry, Civil Engineering, Electrical Engineering, Humanities & Social Sciences, Mechanical Engineering, Maths, Physics, Textile Technology, Computer Science & Engineering, Bio-Chemical Engineering Research Centre, Centre for Energy Studies, Industrial Tribology, Machine Dynamics & Maintenance Engineering Centre, Centre for Materials Science & Tech., Centre for Management Studies, Physics & Electrical Engineering (Combined).

Minimum Qualifications for Admission

(i) For Full-Time Candidates

Candidates must have Valid GATE Score.

(ii) For Sponsored and Part-time Candidates :

Bachelor's degree in Engineering/Technology or Master's degree in Sciences in the relevant field with GPA of 6.75 on a 10-point scale or equivalent (as determined by the IITD) where letter grades are awarded or 60.00% aggregate marks where marks are awarded.

Relaxation upto GPA of 6.20 or 55% marks in minimum qualifying criterion may be permitted for Sponsored Candidates.

Scholarship

Candidate must have a Valid GATE score for the award of Institute Scholarship of Rs. 1800/- p.m.

3. MASTER OF SCIENCE

M.Sc. programmes are offered by the Chemistry, Mathematics and Physics Department of the Institute.

Minimum Qualifications

B.Sc. (Hons.)/B.Sc./B.A. in relevant field with a GPA of 6.75 on a 10-point scale or equivalent (as determined by IITD) where letter grades are awarded or 60.00% aggregate marks where marks are awarded. Relaxation in GPA to 6.25 or in marks to 55% in the minimum eligibility criteria may be allowed to SC/ST candidates.

Scholarship and Freeship

Merit-cum-means Scholarship/Freeship are permissible to M.Sc. students as per Institute rules.

GENERAL INFORMATION

(i) Candidates called for Ph.D. programme will be paid to and fro second class railway fare by shortest route. However, this provision will not apply to sponsored and part-time candidates.

(ii) For Ph.D., M.Tech. and M.Sc. programmes, 15% of the seats for SC and 7-1/2% for the ST candidates are reserved.

(iii) Three seats are reserved for Physically Handicapped persons for admission to M.Tech. and Ph.D. programmes together.

Subject to availability of seats admissions will also be offered to part time and sponsored candidates. Only employee of public sector undertakings or Government organisations or private industries (approved by Faculty Boards) with a minimum experience of two years and Defence sponsored officers are eligible as sponsored and part time candidates. Sponsored candidates are required to submit sponsorship certificate from their empolyers stating that the candidate would be treated as on duty with his usual salary and allowances and that he will be fully relieved for the period of study. In the case of part time candidates their organisation should be situated within the distance of 50 km from the Institute. Part time candidates are required to submit a No Objection Certificate from their employers stating that the candidate is permitted to pursue his studies on part time basis. Applications unaccompanied by such certificates from the employer will not be entertained. Hostel accommodation will be available only to full-time non-Delhi based students subject to availability.

HOW TO APPLY

Application form and Information Brochure can be obtained from the Dy. Registrar (PGS) by sending application fee of Rs 15/- by a crossed Bank Draft only in favour of IIT Delhi payable at New Delhi, alongwith a self-addressed envelope (25 cm x 11 cm) affixing postage stamps worth Rs. 11.40 and superscribed "Application for "Ph.D."/"M.Tech."/"M.Sc." as the case may be. Application Forms can also be had from the Counter (Room No. AD-236) against Bank Draft for Rs. 15/-. during working hours. THE NO. AND DATE OF THE BANK DRAFT SHOULD BE MENTIONED BY THE CANDIDATES AT THE APPROPRIATE COLUMN WHILE SUBSEQUENTLY SUBMITTING THE PRINTED APPLICATION FORM/TESTIMONIALS.

The completed applications should be sent by the candidates direct to the Dy. Registrar (PGS), Indian Institute of Technology, New Delhi-110016. Those who wish to apply for admission to more than one Department/Centre should make separate application with prescribed fee. The application form at the top with all enclosures placed below should be secured together tightly with a tag before mailing.

Interim Enquiries will not be Entertained

Last Date for supply of Application Forms :
By Post : 8.5.1990
At Counter : 18.5.1990
Last Date for receipt of completed Application Forms : 21.5.1990

The Contents of Information Brochures will stand Modified to the Extent Indicated in this Advertisement.

Advt. No. IITD/PGS/1/90

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University News

MONDAY, APRIL 16, 1990 Rs. 2.50

GOA UNIVERSITY
SECOND ANNUAL CONVOCATION
24TH FEBRUARY 1990
CHIEF GUEST: HIS EXCELLENCY DR. SHANKAR DAYAL SHARMA
VICE-PRESIDENT OF INDIA
AIR

Dr. Shankar Dayal Sharma, Vice-President of India, delivering the Convocation Address at the Second Annual Convocation of the Goa University. On his right are Shri Khurshid Alam Khan, Governor of Goa & Chancellor of the University and Dr. B. Sheik Ali, Vice-Chancellor.

MADURAI KAMARAJ UNIVERSITY

ADMISSION TO M.Sc. COMPUTER SCIENCE (SOFTWARE) PROGRAMME 1990-'92

Notification No. R/40/90: Dated: 30.3.1990

Applications are invited for admission to DRDO-sponsored two year M.Sc. Computer Science Programme. Admission will be based on entrance test and subsequent interview by DRDO. After successful completion of the course as per DRDO guidelines the candidate shall be eligible for appointment in Defence Research and Development Service (DRDS) as Scientist 'B' (Class I Officer) subject to the final selection by DRDO Committee.

Number of seats	:	15 (Fifteen)
Qualification	:	Candidates possessing a first class B.Sc. Degree in Mathematics/Physics/Computer Science/Electronics from recognised Indian Universities. Relaxation of 5% of marks for SC/ST candidates is permissible.
Age	:	Not over 23 years as on 30th May, 1990. Those born earlier than 30.5.'67 are not eligible to apply. This is relaxable by 5 years in the case of SC/ST candidates.
Course Duration	:	Two years.
Financial Assistance	:	Rs. 800/- per month.
Medical Fitness	:	Admission is subject to medical fitness as prescribed for Class I Central Govt. Service.
Bond	:	A bond for serving DRDO for a minimum period of 5 years immediately after the successful completion of the course that is securing atleast 60% marks in the University examination and subject to final selection/screening by DRDO Committee for appointment to Scientist 'B'.
Reservation	:	Subject to availability of suitable candidates 15% of the seats for S.C. and 7.5% of the seats for S.T. candidates are reserved.
Application Form	:	Application form and prospectus may be obtained from the office of the Registrar, Madurai Kamaraj University on all working days between 10.00 a.m. and 4.00 p.m. against a crossed bank draft drawn in favour of the Registrar, Madurai Kamaraj University payable at Madurai or a State Bank of India challan remitted into Account No. I of Madurai Kamaraj University for Rs. 50/- (for SC and ST candidates Rs. 30/-) OR by sending a crossed bank draft/State Bank of India challan for Rs. 50/- (for SC and ST candidates, Rs. 30/-) along with a self-addressed stamped envelope (30 x 17) bearing postage stamps worth Rs. 3/- to the Registrar of this University.
Last Date for issue of application forms		
By Post	:	30.4.1990
In Person	:	4.5.1990
Last Date for receipt of filled in applications	:	10.5.1990

The entrance test will be conducted at Madurai, Madras and Bangalore on Sunday, the 27th May, 1990. The venue of the entrance test will be intimated in due course. Entrance test at Bangalore centre will be conducted only if there are sufficient number of candidates.

NOTES:

1. Candidates with higher qualification such as M.Sc. are not eligible to apply.
2. Candidates who are appearing for the final year of the B.Sc. examination may also apply. However, they will have to submit their final year marks sheet in original at the time of interview, otherwise their candidature will be rejected.
3. SC/ST candidates should send a xerox copy of their community certificate while sending their requisitions for the application form.

Palkalainagar,
Madurai-625 021.

DR. T. SIVASANKARAN
REGISTRAR

UNIVERSITY NEWS

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Editor :
SUTINDER SINGH

Agricultural Research Administration

R.K.P. Singh*

Agriculture is the backbone of Indian economy which accounts for nearly 30 per cent of Gross National Product (GNP) and supports over 70 per cent of population in their livelihood. The total land area is estimated at 329 million hectares and nearly 50 per cent of the land is under cultivation. Nearly 70 per cent of the agriculture is rainfed and is prone to natural calamities like drought and flood. The first half of this century was marked by stagnation in agricultural growth. The growth rate in agricultural production during this period was about 0.3 per cent per annum and it was on the whole stagnant. Consequently, the economy of rural areas, of which agriculture is the main component, remained stagnant. Since independence, it has been realised that the agricultural sector has to play a pivotal role in the transformation of the rural and agrarian economy. Thus, independent India has been marked by a commitment at the highest political level to the modernisation of agriculture. This political commitment in its turn became reflected in numerous steps for improving the infrastructure for agriculture and rural development. Consequently, the food production has increased from 51 million tonnes in 1950-51 to a record production of 172 million tonnes in 1988-89 which led the country to attain self sufficiency in food. The major share in this increase in production during 1950-66 came from the additional area brought under cultivation and growing irrigation potential. Much of the increase in production in the later period (after 1966) had come through increase in productivity as a result of Green Revolution which has been possible due to a vast research infrastructure and scientific manpower of agricultural research system in the country. However, the self sufficiency in food at the present low level of purchasing power and consumption capacity may not be considered stable because it can be eroded by a light shock of natural calamities and it is not sufficient to eliminate hunger in the country. It still requires to attain self reliance in food production to enable the increasing population purchase the required quantity of food at reasonable price.

One of the essential components that ensures required capability to increase agricultural production is an effective agricultural research system which would meet the requirements of emerging technological needs in present dynamic socio-economic milieu. The present agricultural research system in India has been developed over years of experience and experimentation which has undergone some major changes in concept, organization and activities. The Famine Commission (1901) was an important landmark in the development of agricultural research administration in India. The commission advocated the expert research in agricultural problems which was probably the crying necessity of the time. In June, 1903, the Government of India submitted to the Secretary of State a scheme for the establishment of an Agricultural Research Institute, an Experimental Farm and an Agricultural College for agricultural research and education in India. The Imperial Agricultural Research Institute (IARI) was established at Pusa (Bihar) in 1905 which was the beginning of organised agricultural research in the country. The Institute (IARI) was shifted to New Delhi after the great earthquake of 1934.

Head, Department of Economics and Management, Rajendra Agricultural University, Pusa, Samastipur-848 125 (Bihar).

The Royal Commission on Agriculture (RCA) (1928) was appointed by the Government of India to examine and report on the conditions of agriculture and rural economy of the country, and to make recommendations for the improvement of agriculture and to promote the welfare and prosperity of the rural population. The commission emphasised the importance of agricultural research in agricultural development. The Commission observed that the impact of agricultural research done in the country was far too small and the Agricultural Research Institute at Pusa (Bihar) was unable to cope with the task of organising agricultural research all over India. In addition the expertise available in the provinces increased considerably in number as well as in quality since the establishment of the Institute, and it was no longer necessary for the provinces to depend exclusively on the Institute for assistance. The RCA recommended the establishment of an Imperial Council of Agricultural Research (ICAR) to promote, guide and coordinate agricultural research throughout the country. The Imperial Council of Agricultural Research was set up in 1929 in pursuance of the recommendation of the RCA which was renamed the Indian Council of Agricultural Research in 1947. Initially, the objectives of the ICAR required it to promote, guide and coordinate agricultural research throughout the country without either maintaining research institutes directly under its control or employing its own expert staff for the purpose. The arrangement was found neither efficient nor adequate, resulting in the neglect of research on different important aspects of farming, because science and technology as applied to agriculture during the colonial rule were harnessed for serving essentially the interest of the rulers rather than the ruled. The problems of management and administration of research have assumed new dimensions in the context of the rapid and extensive growth of science and technology and their applications in varied fields of agriculture.

A number of expert teams were, therefore, set up to review the various aspects of agricultural research administration to recommend ways and means of effecting improvement in agricultural research. The Agricultural Research Review Team (1964) examined the agricultural research and education system of the country and recommended a complete reorganization of the ICAR and an overhaul of agricultural education since the basic problem of Indian agricultural research system was fragmentation in terms of management and organization. The ICAR was reorganized by the Government of India in 1966 by bringing under it all the research institutions under the control of the then Ministry of Food and Agriculture and by reconstituting the Governing Body of the ICAR to make it pre-eminently a body of scientists and others with knowledge and interest in agriculture. A number of agricultural universities were set-up in different states, more or less on the pattern of Land Grant System of U.S.A. This was followed by the transfer of the responsibility for research from State Agriculture Department to respective agricultural universities. However, some of the State Governments are still keeping some of research activities and agricultural universities are still to be recognized as an agent of State Government for carrying out agricultural research.

Inspite of all these odds, the responsibility of research and development in agriculture lies mainly with the agricultural universities (26) and central research institutes (43) of the Indian Council of Agricultural Research. The agricultural research situation in the country is not uniformly satisfactory. Like agricultural development, agricultural research has also developed well in a few areas whereas its development has been less than satisfactory in larger areas of the country.

The coordinated research programme of the ICAR which was in vogue as early as 1957, is the major component of agricultural research system in the country. After reorganization of agricultural research system in mid-sixties, coordinated research projects were designed as a national grid of cooperative experiments among scientists bolonging to different disciplines of agricultural universities and ICAR institutes. Initially, there have been striking advances in agricultural research in India but it could not deliver the desired result. The National Commission on Agriculture also examined the working of the coordinated projects and reported that some of the projects have turned out to be mere data collecting units in a routine manner to the detriment to their research contents. This has created a sense of frustration in active researchers who have lost interest and initiative in their work. The main purpose of coordinated projects is group thinking and collaboration which has thereby been lost sight of. There are instances in which the advent of a coordinated research project in an university has led to the closure of research work on a similar line being carried out there. It is forgotten that the coordinated projects are meant to supplement and not supplant research resources of the institution. But what takes place in practice defeats the very purpose of the programme. This situation has a far more harmful effect

LIBRARY

n solution of local problems because the institutes/niversities having coordinated projects take no more terest in local problems connected with the partiular topics. The social science departments of gricultural universities are a neglected lot since there s no coordinated project in social sciences and ICAR/gricultural universities do not attach much importance to these subjects which have become ornamental components of agricultural research system.

Successful implementation of research projects in general and coordinated research projects in particular have also been affected due to bureaucratic style of working in research organizations particularly in appointing scientists and delegating financial power to the project leader. Most of the coordinated schemes have never been staffed fully and the work of the scheme is carried out by the deputationist from respective functional department who considers the project work as burden since as soon as the new incumbent is appointed, the deputationist would have no place in the scheme.

ICAR provides grants for conducting research to individual scientist or a team of scientists also which is known as Ad-hoc Research Scheme. As per information available, majority of Ad-hoc Research Schemes is concentrated in ICAR institutes and scientists of agricultural universities have not been able to obtain due share in financial assistance for conducting ad-hoc researches. The fund available for ad-hoc research schemes should be more and more diverted to agricultural universities since the financing of agricultural research by the State Government is negligible and university only in rare cases, specifically allocate funds out of State Government budget for research work of their scientific staff. Outside sources are the only means to live a scientific life in agricultural universities. This is more true for backward states.

Most of the agricultural universities of the country which are main seats of agricultural research are starving due to inadequate financial allotment from the respective State Governments. The allotment of fund for agricultural research particularly to agricultural universities is less than one per cent of the total outlay of state budget whereas the National Commission on Agriculture recommended the allotment of 5-10 per cent of state total outlay to agricultural research and education. The fund available to agricultural universities is even not sufficient to meet the expenditure on salaries of scientists and staff of agricultural universities, hence expenditure on research has become only a dream of these universities. The attitude of the ICAR has also been apathetic to agricultural universities. Due to weak financial support, the research base of agricultural universities is extremely poor. There is an urgent need of liberal financial assistance to agricultural universities for research work to enable them to come up to a desired level. For each plan period the centre (ICAR) and the state should communicate the universities of the minimum level of funding for research from plan funds annually enabling the universities to plan their research activities.

The working of agricultural universities has not been reviewed properly since their establishment. However, sporadic efforts have been made by some developed agricultural universities and they reorganized their organization and functioning. The conference of Vice-Chancellors of agricultural universities is regularly held but it became only ritual and social gathering of universities' elites since its recommendations specially on financial state of affairs of agricultural universities have not been accepted by the Government.

All the agricultural universities and institutes are busy in expansion of activities to match the development in science and technology. The most of the expansion is based on common belief that expansion is progress. But one should realise that consolidation is no less a sign of progress and better than unthoughtful expansion in the name of progress especially at the time of financial stringency. Agricultural universities are autonomous organizations and they are free to make expansion as per need but the proper monitoring and administration of activities are equally important which is only possible with decentralized administration. It has been observed that scientist administrators are more fond of bureaucratic style of functioning and official red tape is very common in these universities. The situation is not much different in agricultural research institutes of ICAR.

The reorganization of agricultural research system is a need of the day and the mobilization of scientific and technological resources of the country in the right direction requires fresh and objective thinking. The research organizations should gear their objectives to the development plans and programmes, and translate the national objectives into scientific and technological work plans and implement them effectively. Each scientist should be given opportunity to formulate his annual as well as perspective plans at the beginning of each five year plan which should be evaluated by experts in the field. Once the projects are finalised and budgetary allocation made for each project, the scientist should be independent of any financial control within the budgetary allocation but must be accountable for the progress achieved and expenditure involved.

It is also universally accepted that unless a requisite number of adequately qualified research workers are made available in one place, purposeful results cannot be obtained. However, no quantitative and qualitative specifications have been worked out in this regard. Even though the number of scientists is the main criterion for conducting successful research, one must bear in mind that proper research facilities, congenial research environment and suitable research incentives are equally important. In fact, all the above components are so important that the lack of one of them cannot be compensated by increasing any other incentive/component and the research effort may not at all reach the desired level.

Finally, it may be said that the overhauling of agricultural research system is needed for the development of efficient organizational structure, in general and for agricultural universities, in particular. Research priorities and strategies should also be modified to match the development goals of the country. Linkages betwean research and development institutions, and delivery of research results to the field are also important components which require to be developed urgently. ☐

Shocking Beyond Words

The dastardly killing of Prof. Mushir-ul-Haq, Vice-Chancellor of University of Kashmir and his Private Secretary Mr. Abdul Ghani is shocking beyond words. Prof. Haq and his aide were held hostages together with Mr. H.L. Khera, an eminent technologist and General Manager of the Hindustan Machine Tools, Srinagar, by the militants of the outlawed Jammu & Kashmir Liberation Front since April 6, 1990. For full five days the nation had waited with bated breath for mercy from the subversives. But that was not to be. The killings defy all logic and reason and no amount of explanation is going to lessen the grief.

In Prof. Mushir-ul-Haq's death the academic community has lost an eminent scholar in Islamiat, Contemporary Indian History, Urdu and Arabic Literature. The University of Kashmir has lost a dedicated leader and an able administrator. The loss is all the greater for the Jamia fraternity where his friends and erstwhile colleagues were looking forward to his return from the Valley on completion of his tenure as Vice-Chancellor on 30th May, 1990. Association of Indian Universities has been deprived of a learned member, who not very long ago played host to the General Body Meeting of the Association at Srinagar in October, 1989.

A condolence meeting organised at the Secretariat of the Association to mourn his death passed the following resolution :

This meeting of the staff of the Association of Indian Universities held on 12-4-90 places on record its feeling of extreme grief over the sad, inhuman and senseless killing of Prof. Mushir-ul-Haq, Vice-Chancellor of University of Kashmir and his private secretary, Mr. Abdul Ghani. This meeting unreservedly condemns this dastardly action.

In Prof. Mushir-ul-Haq's untimely demise the University of Kashmir has lost a worthy leader, the academic community a renowned scholar and the Association of Indian Universities a good friend and a patron.

This meeting resolves to convey its profound sense of grief and heartfelt condolences to the members of the bereaved families.

Psychological Problems of Women Hostlers

Meenakshi*

Hostels and hostlers have not been the subject of serious attention and study in our system of college education. No doubt the UGC has initiated several schemes of financial assistence and academic guidance towards ameliorating hostel settings and revamping hostel managements, yet it is only truism that our hostels and hostlers are a neglected lot, a casual affair, no body's care and concern. It is no exaggeration that an otherwise inefficient and indifferent teacher, one who is awkward for the college administration and not interested in reading, writing or any serious pursuit and the one who invidiously frees himself from teaching responsibilities is conveniently placed as Hostel Superintendent. It has not so far been realised that hostel management is a specialised job and like any other professional assignment, it calls for pre-appointment training and preparation and also occasional reinforcement during the tenure of the job.

Very rarely hostel buildings are raised as such and the needed facilities—water and toilets—provided as per requirements. Usually some rooms originally constructed as stores or as servants' quarters or old kothi's or decaying houses are converted into a complex called Boarding House or Hostel. It is not uncommon to see the broken items of furniture, old records, hose pipes, etc., removed from the college building and stored in the hostles. In short, hostels are not considered as important in themselves, these are only forced appendages usually taken as burden, sought to be reduced as much and as early as possible and ultimately completely got rid of or eliminated. Hostel at Faridkot College of Education, is a glaring example of one such convenient elimination of a hostel.

What is true of hostel buildings, hostel furniture, hostel environments, is much more true of hostlers. They are as much an ignored and uncared lot as their residences. No organised effort has ever been made to understand the needs, aspirations and problems of hostlers and take steps to solve them. In the West, hostels are considered as places of training in manners, in language, in living, in etiquettes, in culture. Hostels socialise the individuals, raise their personalities, identify and develop their talents, remove eccentricites and round off their sharp edged concerns—the rich and the poor, the aristrocrats and the commoners, the aggressives and the meek's the bright and the dull, eat the same food, at the same table, share the same amenities or deficiencies and work and live under the same superintendency, discipline and law. Life is regularised; good and pleasing habits are acquired; dialogue is polished, body is styled, lasting friendship is developed, hobbies are initiated and journey towards complete living is well begun. It is for such advantages that living in the hostels is made compulsory. Even, where there is no compulsion, girls request for admissions to hostels, clamour for hostel life and its glamour. In our case it is only the compulsion of circumstances that bring girls to hostels. In themselves, the hostels have no attraction, no fascination. They have nothing to offer. In many cases, bad hostel food, rigidity of hostel rules, unsympathetic and hostile behaviour of the warden, conjested and unhygienic living accommodation, adverse study conditions and absence of a rich programme of cultural activities and thoughtless compulsions and policing on students haunt on the hostlers mind and they wish to quit the hostels at the first opportunity available to them.

Whenever on account of seasonal or festival holidays or when hostel buildings are required to accommodate delegates for conferences or seminars or players for State/National level sports meets etc., and the hostlers are asked to vacate the hostels, it has been found that they do not protest, they do not grumble, they do not resist, rather they are very happy to find a ready opportunity to leave the hostels and go to their home—sweet homes. It has been found that near their examinations many serious students shift to the house of their local relatives and friends so as to find a place conducive for their study.

Virtues such as compassion, tolerance, sympathy, fellow-feeling, endurance, cooperation, give and take, truthfulness and discovery of self, awareness of personal weaknesses and shortcomings, eagerness to learn and the practical translation of the dictum 'service before self' etc. etc. are picked not in the classrooms but in hostel rooms, in the dining hall, on hostel functions and on the playgrounds. But all this can

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**Department of Education, Punjabi University, Patiala.*

happen only if efforts are made in the right direction. Neglected hostels breed a corrupt behaviour, dandyism, filthy language, adulterated life, sexual immorality, malicious motives and emotional outbursts. And quite a large number of parents are sorry for having sent their daughters to such hostels. Good is not returned to them as better, but as evil, something they never asked for, wished for.

Hostlers have many academic, personal, physical and psychological problems which deserve to be looked into and solved. Problems connected with their rooms, their bathrooms and lavatories, their kitchen, games and activites are certainly important but do not form the substance of this paper which is directed towards only the psychological issues connected with the women hostlers.

These problems have been explored by circulating a small questionnaire among hostel girls in four colleges at Jalandhar, Chandigarh, Patiala and Amritsar. The observations made in the response sheets have been verified and augmented by interviewing some women hostlers individually as well as in groups.

It has been found that the hostlers willingly rather happily, come forward to respond to any questionnaire connected with their problems and they vie with one another to come forward for personal discussions and interviews on this issue. The conclusion is inescapable. They have many problems and they are interested in their solutions. For them, it is a God sent opportunity to talk out their difficulties. Their minds are full and they wish to let the steam out. When asked if they liked their hostels, they expressed disgust and most of them disfavoured hostel living and informed that if alternative arrangement like paying-guest facility, putting-up with relatives and friends, is available, they would quickly shift and would not look behind even once. Now, when a youthful girl between 16 and 20 whose body is ripe, thoughts are growing, emotions are aroused; and when she is on the threshold of a career and is in search of a constructive and useful objective in life, and she is under compulsion of circumstances, placed in an uncongenial and uninspiring, non-motivating environment, which our hostels offer, bewilderment, futility, worthlessness, or directionlessness is sure to disturb her. At this age and stage, she becomes profusely aware of her responsibility towards her parents, her brothers and sisters, towards her friends and religion and society, she becomes aware of her physical and moral strength and weakness, of her love towards a young man of her liking or dreams, of her personal honour and prestige, and her achievements and accomplishments. She becomes sensitive to sympathy, applause and ridicule, sensitive to favouritism and sarcasm, and there are numerous occasions and considerable number of issues, when she wants to share her problems, to confide in somebody and to seek guidance, advice, support and sympathy from him. The questionnaire confirmed that most girls had problems connected with their love, with their ailing parents, their brothers and sisters' love affairs, property affairs and with their guilt connected with immoral, antisocial and undesirable acts or deeds of serious and not very serious nature committed by them and they needed someone to help them. But unfortunately there is none around them who would care to listen to them, appreciate their problems and tender suitable and timely advice. Instances of truancy, elopement and suicide are not uncommon. Women principals are treasuring many many immoral deeds and actions and results of inquiries connected with hostel girls, in their bosom, very brave and great of them, indeed!

Agreed, the problems cannot be solved merely when expression is given to them, but very largely the tension-ridden mind feels relieved when the gravity of the problem is shared with a sympathetic listener. Psychology tells us that the suffering caused by guilt on account of some immoral, lowly act, is almost eliminated when the guilty makes a confession to an elder or to a teacher. During individual interviews it was found that there were a few girls burdened by the weight of some guilt or the other - the offence was not very serious, not immoral or much antisocial - writing a love letter to a boy, meeting a boy once and allowing him to a kiss or a hug, using narcotics, staying with a girl friend without the permission of a teacher or parent, impersonation in the house test, reading someone's love letter, tempering with the marks in the result card being despatched to the parents, writing unfounded stories about a girl to her parents through an anonymous letter, attending a friend's marriage, leaving the ailing mother behind, who subsequently dies, etc, etc., but the weight of the guilt had disturbed the tranquility and peace of the students so much that they could not sleep, could not study could not eat, they were turning almost abnormal. If only they could find a shock-absorber and share with him or her their offence, they could have been normalised. When a psychological problem born out of a crime sin, misjudgement, ignorance or ambition, disturbs a girl, she weeps or cries, beats herself, shouts and shrieks or gets abnormally grave like silent, refuses to eat, speak or dress up. And if this happens in the house, someone, maybe the mother, father, uncle or aunt, maybe the neighbour comes to her rescue. She speaks out her problem and is greatly relieved of the burden of guilt or crime. She is saved of the intending depression or mania or mental shock. But when such a situation surrounds a girl in the hostel and there is none to take care of her, instead there are many to riducle her, to condemn and insult her, to play up with her ignorantly committed crime or sin, to announce punishment for her, she is liable to do anything between suicide and murder; becoming a psychotic is the minimum.

Is there any soul in the world who has never done some wrong, who has never committed a crime or sin or offence, who have never lied or deceived anyone and who has never faced a psychological problem. Surely there is none. It is very natural for the girls to commit crimes, sins and offences, some serious and some non-serious, some out of motives and some in ignorance or mischief, some individually and some collectively, some on their own and some on instigation. What is required is to locate such girls who are facing psychological nightmares and also to get at their problems and help them to get out of the soup. Teachers and hostel superintendents can do a lot in this direction, if they have the needed will and sincerity. It is not difficult to find one or two teachers in a college who have a reputation of being possessed of objectivity, justice, fairmindedness and love for students, who are popular among students, who are accessible and who can keep secrets. Such teachers should volunteer themselves for this great task of counselling the problem-ridden students.

When asked the students informed that there were teachers other than the warden or superintendent, in the colleges, in whom they could confide and with whom they could share their secrets. The students felt that some teachers in the college are really capable of helping, guiding and counselling them.

Students also informed that they would like to speak out their problems in private to one teacher whom they chose to do so and not to a committee of teachers, only if they were given an assurance that their secrets would not be given out. Students also indicated that they would not be willing to reduce their problems in black and white. They would talk out, not write out.

The students also informed that they would happily carry out the suggestions and orders of the teachers if they felt that the teachers wished to help them genuinely. It was found that quite a large number of girls and psychological problems upsetting them and that they did seek their solutions and that they were willing to come forward and tell their problems to a teacher who was sincerely interested in their peace and tranquility. In many cases, it was also informed that girls' parents would also be co-operating in the solution of their problems.

What the girls condemned most in the hostels was the bossy, sarcastic. taunting and unjust and unfair partial attitude of the hostel superintendents who sought gifts and glib endlessly. Some respondents used the words 'cruel', 'callous', 'malicious', 'intriguers' and back-biters for their hostel superintendents. Of course, epithets as gentle, considerate, wise sympathetic and sober had also been used.

Based on the responses of the hostlers, some suggestions are given below :

1. Hostel superintendents should be given orientation involving rudiments of adolescent psychology, hostel management, organisation of curricular and cultural activities, students' guidance and counselling, health and hygiene and meaningful conversation.

2. Hostel management should be the concern of the entire college staff and some teachers with suitable aptitude and training be made available to students for guidance and counselling. Time for such sessions of individual counselling be provided in the time-table. It will be in the fitness of things if for every hostel, a trained counseller is officially appointed.

3. Every hostel should be provided with suitable books and monographs in regional languages on "Problems of youth and their solutions", and quite frequently lectures and seminars be arranged in the hostels on subjects connected with girls' problems. The speakers should as far as possible, be such ladies as are experts in the problems of young girls.

4. Physical inadequacies, social inequalities and administrative lapses very often lead to the birth of a large number of psychological problems. Constant efforts should, therefore, be made to provide the required physical facilities, remove social inequalities and plug administrative holes.

5. The problems of hostels and hostlers be looked into periodically on scientific basis and it should be ensured that the hostels are fulfilling the objectives for which they stand.

UNIVERSITY GRANTS COMMISSION

BAHADUR SHAH ZAFAR MARG, NEW DELHI

The University Grants Commission has a scheme intended for the placement of **Research Scientists** in the Indian Universities so as to promote Humanities, Engineering and Technology by providing opportunities to persons with outstanding merit and zeal for creative work. The awards are intended for persons who have shown extraordinary talent for research.

The award of Research Scientists is initially for a period of 5 years and the work of Research Scientists will be suitably evaluated before the expiry of the 5 years term for their continuation in the same category or promotion for higher grade or discontinuation. The research scientists are free to choose any suitable place for placement in Indian Universities/Institutions and they are required to do research work independently.

At present some positions are available in the category of Research Scientist 'A' qualifications is a Ph. D. degree with outstanding record and research experience of atleast 2 years after the Ph.D. degree and an evidence of doing independent research work.

Applications in duplicate in the prescribed proforma as given below should reach the Secretary, University **Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110 002 latest by 30th April, 1990** by registered post indicating clearly on the envelope in Red ink "APPLICATION FOR RESEARCH SCIENTIST A". Also enclose a self-addressed unstamped envelope of 4" x 9".

There are 6 positions each in (1) Social Sciences, Humanities; and (2) Science including Engineering & Technology reserved for Scheduled Castes/Scheduled Tribes candidates.

FORMAT OF THE APPLICATION

CATEGORY

Subject........

Passport size Photograph
to be attached

1. Name in full : Shri/Smt./Kum./Dr.
   (in Block Letters)
2. Date of Birth (in Christian era) :
3. Nationality :
4. Father's/Husband's Name :
5. Address for Communication (in Block letters with pincode):
6. Whether SC/ST, if so specify the caste and attach certificate:
7. Educational Qualifications from Matriculation onwards.

Exam Passed	Name of Univ/Instt.	Year of Passing	Subjects	Div	% of Marks

8. Whether Ph.D. If so, name the discipline and University :
9. No. of Papers Published (attach List):
10. No. of Books Published (attach List) :
11. Total Experience :
12. Employment details (chronologically) from the present position backwards including period of fellowship/scholarship.

Name of the Employer	Full Address	Post held with pay scale	Period	Nature of duties in brief

13. If selected minimum time required to join :
14. The work done by the candidate and evidence of doing independent research work (one page) :
15. Abstract of the work plan proposed to be done by the candidate, if selected for a period of 5 years (one page).

Signature of the Applicant

NOTE : Candidates already in India may preferably send a certificate as stated below in order to facilitate their placement in Indian Universities that (a) General facilities required such as laboratories equipment etc. are available in the department. (b) No foreign exchange is required for taking up this project/foreign exchange is required for taking up this project/foreign exchange is required indicating the specific items (score out whichever is not applicable). (c) This research proposal has not been submitted to any other agency for assistance.

Date :
Signature of the Applicant
Station :

______________ Head of the Deptt.
Signature

__________ Registrar/Competent Authority
Signature

______________ Name of Institution

A short synopsis may kindly be given in the following format on the paper 21 cms x 30 cms and in the centre of the paper by drawing rectangle 16 cms x 6 cms giving the following details :
On separate paper.

Name & Address
Academic Qualifications
Yr. Div. % of marks

1. Matric
2. 10+2
3. Graduation
4. Masters
5. Ph.D.
6. No. of publications
7. Title of the work plan.

Date of Birth
Signature of the Candidate.

davp 89/1271

THE REAL UNIVERSITY

"The real university does not consist of buildings or classrooms or laboratories or libraries. The real university is a state of mind, a continuity of thought, a body of intellectual tradition—to which all teachers and students belong. Growth of such an entity is the real personality of university development," said Dr. Shankar Dayal Sharma, Vice-President of India while delivering the Convocation Address at the Second Annual Convocation of the University of Goa. "Such a state of mind can be induced only by an inner bond with the idea that true education liberates the human spirit…… The perception is that acquisition of meaningful knowledge releases the energy for liberation from not just ignorance or the backwardness that arises from ignorance, but liberation from psychological complexes, prejudices, narrow thinking and other curbs on the potential of the human being," he added. Excerpts

Convocation

The youth in India today are no longer enshackled by colonialism. They can reap the benefits of the struggle that was waged on their behalf by fighters for our freedom and independence. The turmoil and sacrifices of that struggle was sustained by a fervently held aspiration—that coming generations might be free to determine the course of their lives and to re-build the nation. All the suffering and pain in the struggle was undergone to achieve this goal. It is therefore a joy to see the youth of our country, the youth of Goa, coming forward to participate in the great task of nation-building. I believe this University has prepared its students for this endeavour.

I am happy that Goa University has registered commendable progress since its inception. A number of connected concepts have been applied to shape the growth of this university. A series of liberal, scientific and professional managerial and skill-oriented courses have been established. The departments of Marine Sciences, Computer Sciences, Bio-technology, Micro-biology, Management Studies, Geology, Physics, Chemistry, Humanities and Social Sciences have been set up. The objective of establishing a Non-conventional Techno-professional institute to produce middle level technicians appears to be an innovative and productive measure. I understand that it is to be modelled on the scheme of the American community colleges imparting an associate degree with an 80 per cent vocational component and free of several inhibitions such as rigidity in course structure, examination-orientation and complicated eligibility requirements. I hope the authorities concerned would give this initiative all the support it deserves. I am particularly happy that Goa University has a programme of social service at undergraduate level—on the logic that the association of the youth with the task of removing illiteracy, promoting civic consciousness and public health and developing a spirit of service, would be an essential aspect of education. The Board of Extra Mural Studies set up by the University has a crucial role to play. The inculcation in our youth of our ancient and time tested values, is an activity which, in my view, is central to the whole concept of true education.

Having been associated with education for more than four decades, and being conscious of certain potentialities that Goa University may have, I would like to mention a few possible lines of development which may prove rewarding. Goa University with its relatively compact jurisdiction—as contrasted with the jurisdictions of the universities at Bombay, Delhi, Calcutta and Madras—can concentrate its growth in a much more systematic manner. Also, the University being new, its authorities can apply, from its formative stage, modern concepts of university management and development, suited to the local environment. One of the important objectives could be to build vocational skills and expertise related to the proper utilisation of local natural resources. Enhancement of human resources with regard to marine potential, forest and mineral potential should evidently occupy high priority. I should expect that in all these three areas, Goa University ought to be able to create institutional structures of national and international importance and prestige in the years to come. Therefore, simultaneous to the task of consolidating the progress achieved so far, the task of augmenting and magnifying the infrastructure for high quality education should be undertaken to build necessary skills in selected sectors.

Linked to this process should be an effort to connect the requirements of industry, agro-industry, agriculture and tertiary services with higher education. It should be possible to calculate the trained manpower requirements in these sectors and to plan the academic life of the University to fulfil these requirements. The syllabi and the technical and scientific facilities should similarly be organized to equip students precisely in those areas of knowledge and skills identified to be relevant in terms of local resources and employment needs. An effort should be made to interest concerned industrial and commercial establishments in investing funds and non-financial resources so that the necessary equipment, testing and laboratory facilities, educational literature and stipends could be created for training requisite manpower.

In case people think that this idea is new or without the highest ideological sanction, I should like to bring to their attention the following passage by Mahatma Gandhi in the *Harijan* of July 31, 1937 : "I would revolutionize college education and relate it to national necessities. There would be degrees for mechanical and other engineers. They would be attached to the different industries which would pay for the training of the graduates they need. Medical Colleges would be attached to certified hospitals. As they are popular amongst moneyed men, they may be expected by voluntary contribution to support medical colleges." Unquote.

The task of establishing linkages between higher education and sectors of our economy should be implemented with all due urgency. I would recommend this matter to be examined jointly by authorities in the State Government, in the University, in industry, commerce and scientific and technical establishments, so that a positive and practical impetus can be given in this direction.

At the same time, while the organisational strengths of different university departments and institutions are developed, and new structures are set up, more sophisticated expertise instilled, and technical standards enhanced, one other critical factor needs to be kept very prominently in mind. It is this.

The real university does not consist of buildings or classrooms or laboratories or libraries. The real university is a state of mind, a continuity of thought, a body of intellectual tradition—to which all teachers and students belong. Growth of such an entity is the real personality of university development.

Such a state of mind can be induced only by an inner bond with the idea that true education liberates the human spirit. Our ancient wisdom articulated this in the words साविद्या या विमुक्तये. The perception is that acquisition of meaningful knowledge releases the energy for liberation from not just ignorance or the backwardness that arises from ignorance, but liberattion from psychological complexes, prejudices, narrow thinking and other curbs on the potential of the human being. It is a grand conception—for it is based on the idea that truth has a profound power and real education, by equipping the human being with the power of truth, generates forces of liberation. It has also been said : शास्त्र प्रयोजनम् तत्व दर्शनम् : Realisation of Truth is the aim of knowledge.

The enormous potentialities evoked by accumulating knowledge, and the power that comes with knowledge, would have true meaning only if regulated by moral and ethical concerns. Let us remember that in our mythology, the demons and *Rakshashas* were supposed to be endowed with profound knowledge and enormous powers. But their immense capabilities were not directed to moral and ethical purpose; there was no higher sensibility directing their tremendous practical ability. By this token, the most knowledgeable person, if he is devoid of ethical and moral orientation, is of little use to society, *and of even less use to himself*.

Among the values that must regulate the use of knowledge is the concept of Service. It is important to remember that Service has been given the highest position in the moral and ethical codes of *all* religions. The ideal has been expressed in the beautiful Shloka :

"न त्वहं कामये राज्यं, न स्वर्गं न
पुनर्भवम् ।
कामये दुख तप्तानां प्राणिनांऽआर्ति
नाशनम् ।।"

(I do not desire any kingdom nor heaven nor re-birth. I desire only the power to remove the suffering of living things).

The Saint Tukaram had said :

"जे का रंजले गांजले, त्यासी म्हणे जो
आपुले, तोची साधु ओनखावा,
देव तेथेची जाणावा ।।"

(He who identifies with those who are striken and destitute should be recognised as wise, divinity may be appreciated therein).

The Saint Narsi Mehta has said :

"वैष्णव जन तो तेने कहिए
जे पीड पराई जाणे रे ।
पर दु:खे उपकार करे तोये,
मन अभिमान न आणे रे ।।"

(Consider him to be the true follower who identifies with those who suffer and has no vanity in serving them).

The Holy Quran has repeatedly warned that Service of fellowmen is the true service of the Almighty. The Christ in his Sermon on the Mount said : "In the service of my people do thou serve me". Love, compassion and service are the core ideals of Buddhist and Jain thought. It is the message of all our great religions that service of fellow creatures leads to human fulfilment. The Rg. Veda has expressed the concept of service beautifully in the following verse :

कृषिन्नित्फाल आशितं कृणोति
यन्नध्वानमप वृड्क्ते चरित्रैः ।
वदन्ब्रह्मावदतो
वनीयान्पृणन्नापिरपृणन्तमभिष्यात् ।।
(Rg. Vd. X-117-7)

(The ploughshare furrows the field and produces a bountiful crop—for consumption by other).

An ascetic, in his austere life, leads others to the path of happiness; the learned person is he who gives knowledge even to those who criticise him. In the Second Epistle of St. Paul the Apostle, to the Corinthians, he said : "He which soweth sparingly shall reap also sparingly; and he which soweth bountifully shall reap also bountifully. Every man according as he purposeth in his heart, so let him give; not grudgingly, or of necessity : for god loveth a cheerful giver". The life of St. Xavier, forcefully reflects his radiant message of service as a form of prayer.

This concept of Service of one's fellowmen includes all humanity; it has a pluralistic approach bereft of prejudices of any kind. The approach is based on a recognition of the oneness of man which is a central idea of all religions and the realisation that true fulfilment of the human being comes through service of his fellowmen.

The identity of thought in different religions was recognised by Mahatma Gandhi, who said (In the *Hind Swaraj*) "Religions are different roads converging to the same point". In *Young India* of September 18. 1924 he said: "We see Him through different media—the Quran, the Bible, the Talmud, the Avesta or the Geeta. The same sun shines on the Himalayas as on the planes". Bapu had thus explained the thought in the Rg. Veda :
"एकं शद् विप्रा वहुधा वदन्ति"

Acquaintance with these values and devotion to a life based on these values should be a major objective of true education. The Sheekshavalli in the Taittreya Upanishad has cautioned :

सत्यान्न प्रमदितव्यम् ।

(Never deviate from truth)

धर्मान्न प्रमदितव्यम् ।

(Never deviate from rectitude)

कुशलान्न प्रमदितव्यम् ।

(Never relax standards of excellence)

स्वाध्यायप्रवयनाभ्यां न प्रमदितव्यम् ।

(Never be remiss in due studies and spreading of knowledge).

All this places a great responsibility on both teachers and students. For on the one hand according to our Indian tradition teachers have been assigned a status equal to divinity (Acharya Devo Bhava). The very word 'Acharya' denotes one whose conduct must be exemplary, one who can impel minds to move in a positive direction. Respect for teachers is an essential element of the Indian tradition through the Guru-Shishya Parampara. And with status comes responsibility, for the teacher is also accountable for the deeds of his disciples or students: "शिष्यं पापं गुरूं व्रजेत" (for the sins of the disciple the teachers are also liable).

I should like to express my hope that the students of Goa University, by virtue of the quality of education they have received and the atmosphere in which they have evolved, will be recognized everywhere, for their excellence in scientific and technical subjects, research and development and creative interaction with the world of production which supplies the material needs of the nation—and, equally, that they should be recognised for their moral and ethical stature - giving sustenance to national consciousness. These characteristics should become synonymous with the products of Goa University.

To you, young people, stepping into a world that is harsh, competitive and demanding, where the potential for frustration may, at times, seem to loom larger than the promise of fruition—I have but a simple thought to offer : have faith in yourself and self-confidence, trust in the timeless values of Indian culture, cultivate a determined and resolute outlook and strive to work for society in a spirit of service. ☐

VALLABHBHAI PATEL CHEST INSTITUTE
UNIVERSITY OF DELHI
DELHI-110007

Reference Advertisement which appeared on 12-3-1990 for the post of Director, V.P. Chest Institute. Last date for receipt of applications has been extended to 30-4-1990. All other terms and conditions remain the same.

Satish Chandra
ADMINISTRATIVE OFFICER

Saha Institute of Nuclear Physics

Sector-I, Block-AF, Bidhannagar
CALCUTTA-700 064

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(1990-91 Session)

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Or

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For application forms and prospectus, write to :

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Saha Institute of Nuclear Physics,
Sector-I, Block-AF, Bidhannagar
Calcutta-700 064.

with a self-addressed envelope (25 cms x 11 cms) before 15th May, 1990. **Do not affix any stamp on the envelope.** Completed application forms must reach the Registrar, SINP by **May 31, 1990.**

D.N. Bhattacharjee
REGISTRAR

Communication Research and Training

The Department of Communication & Journalism of the Osmania University organised a National Workshop on Communication Research & Training. Sponsored by the UGC, the workshop was attended by over forty journalism teachers, including several Heads of Departments and Senior professors from 20 universities all over the country.

Inaugurating the Workshop, Prof. Jaswanth Singh Yadava, Director, Indian Institute of Mass Communication, New Delhi said that the Workshop should address itself to the task of orienting current journalism and communication training to the new media technologies. He urged that media education should come to terms with the information revolution now changing the face of the country.

Mr. Abdur Rahim, Director of the Workshop and Head, Deptt. of Journalism, Osmania University, in his keynote address underlined the need for media educators to keep abreast of the changing socio-economic scenario in the country as well as the fast moving political upheavals. Media, Mr. Rahim maintained, was now playing a dominant role in setting the agenda for policy making. There was need for a new breed of journalists and communication experts who would give the lead and take the country into the 21st century, he emphasised.

Prof. Syed Iqbal Qadri, Head, Deptt. of Journalism, Maharaja's College, Mysore University, emphasised the need for teaching the historical background in order to provide a proper perspective to fledgling journalists. He also stressed the need to translate journalistic jargon into Indian languages.

Dr. A. S. Balasubramanya, Head, Deptt. of Journalism, Karnatak University, Dharwad, suggested that journalism and communication teachers should interact with other media professionals in forums like ICTTR. He was supported by Dr. B.P. Sanjay, Lecturer in Journalism, Madras University. In a general discussion that followed on this issue, it was unanimously agreed by the participants that the Indian Journalism Education Association (IJEA) which was an organisation of Journalism and Communication teachers, should be strengthened and revitalised.

Dr. K.M. Srivastava, Reader, Deptt. of Journalism at Punjabi University, Patiala, urged the participants to make use of the facilities provided by the UGC in equipping the Departments with Desk Top Publishing Systems and personal Computers. He outlined the ways these could be made use of in the Departments.

Prof. Devesh Kishore, Nationnal Academy of Agriculture and Rural Management, Hyderabad, reviewed the types of communication research methods in India and noted that the sample survey has been unduly overused. He said that there was a need to develop theoretical concepts and models in the Indian context, and suggested some areas for improvement—the preparation of a communication technologies inventory, the planning and conducting of experiments to determine the effectiveness of communication technologies, the devising of modes of producing effective mass media programmes and the study of mass media organisations. Mass media should support extension services and more studies should be done in tribal and rural areas.

Dr. B. S. S. Rao, Director, Information, National Institute of Rural Development, Hyderabad, said, there was a great need for communication support to vital bodies like the Planning Commission. What was required was initiative rather than technology to conduct meaningful research. According to him, the tools of a researcher are his eyes, ears, head and the hands. He exhorted the participants to produce relevant research studies.

Dr. Usha V. Reddi, Director, Audio-Visual Research Centre, Osmania University, stated that the present state of journalism training should cause anger if not despair. She called upon the participants to strengthen the foundations of communication teaching and research. Each individual should look for ways to accomplish goals and preserve till the task is successfully accomplished.

Prof. S. Bashiruddin, Co-ordinator, Special Assistance Programme (SAP), Dept. of Journalism, Osmania University, apprised the Workshop of new developments and future trends in journalism. He said that the focus of news reporting has shifted from definition to depiction and this reflected the influence of television. He said that the trend was now to give the strategy behind the events, what impact it had on the issue in question. He spoke of new concepts of ethics and perception, and the need for data-based reporting, computer literacy and visual literacy among journalists. Prof. Bashiruddin opined that research should go hand in hand with news reporting and cited the coverage of the '89 Elections' as an example of this.

The participants were divided into various sub-groups to discuss at length issues concerning communication training and research in the country. The topics discussed at the workshop included (1) Public Relations, Advertising and Organisational Communication, (2) Rural, Extension and Development Communication, (3) Communication Theory & Research, (4) Laboratory Journals and Practical Training, (5) Teaching and Training in Radio, TV and Film Communication, and (6) Newspaper Reporting, Editing and Magazine Writing.

After a week's deliberations the Workshop came out with several pragmatic and practical suggestions for the improvement and enrichment of Journalism and Communication training in India.

In his valedictory address, Prof. Anjan Kumar Banerji, Chairman, UGC Panel on Mass Communication said that a successful journalism teacher should be a successful journalist and teachers should endeavour in this direction. He emphasised the need to start diploma and degree courses in new areas like public relations, science communication, film studies, etc. Current affairs should be given adequate importance in the syllabi of journalism courses, he added.

IGNOU Study Centre at Pondicherry

A Study Centre of the Indira Gandhi National Open University was recently inaugurated at the Pondicherry University. Inaugurating the Centre Dr. D.D. Joshi, Pro-Vice Chancellor, IGNOU, detailed the programmes and courses offered by IGNOU and their salient features in providing best education even to those without any formal qualification. Dr. K. Venkatasubramanian, Vice-Chancellor, Pondicherry University, who presided, emphasized the importance of the Open University in providing opportunities for the people who missed the education at an early age due to various factors in their life. He added that Open University will help all the people in their effort through self learning and be worthy citizens of the country, irrespective of their age.

The Indira Gandhi National Open University (IGNOU) is a pioneer institution created to impart education with a degree of inbuilt flexibility. By using some of the most modern communication technologies, the open education approach of this university brings the benefits of education to the doorsteps of those who wish to take advantage of it. The educational inputs are presented in various modes such as printed lessons, audio cassettes, video cassettes and periodic face-to-face interactions with academic counsellors. The open university system, is a teaching-learning system. There are 13 Regional Centres and 140 Study Centres scattered all over the country. Each Study Centre is provided with Library, Television, Audio and Visual facilities. The study centres are the actual focal points to enable the students to receive regular information and learning support.

National Conference on Tribal Ecology

A National Conference on Tribal Ecology is proposed to be organised by the Society for Environment and Rural Development Studies, Atarra P.G. College, Atarra, (Banda), U.P. on 13th and 14th May, 1990. The objective of the conference is to call upon the academicians, planners, administrators and social reformers to throw interdisciplinary focus on tribal ecology, to identify hydra-headed problems faced with the tribals and to suggest some ways and means for proper functioning of tribal eco-system.

The topics proposed to be discussed include (i) Tribal Ecology : Conceptual Framework, (ii) Pattern of Tribal Habitat, Economy and Society, (iii) Structural Changes in Tribal Eco-system, (iv) Tribal Culture vs. National Integration, (v) Appraisal of Tribal Development Programmes and Viable Strategy for Tribal Eco-development.

Further details can be had from Dr. R.S. Tripathi, Organising Secretary, National Conference on Tribal Ecology, Deptt. of Geography, Atarra P.G. College, Atarra (Banda), U.P. PIN-210201.

Madras Varsity Plans New Courses

The Senate of Madras University is reported to have decided to institute five new courses, two at the postgraduate, one at the degree, and two at the diploma level. The courses are : M.A. in Tourism Management, M.Sc. in Material Science (Inter-disciplinary), Bachelor of Religions of India (BRI), Diploma in Public Affairs, and Diploma in Saiva Siddhanta.

M.Sc. (Electronics Sc.) at Gauhati University

The University Grants Commission (UGC), on the recommendations of Expert Committee, has agreed to provide assistance to Gauhati University for starting

M.Sc. Electronics Science. The Department is supposed to enrol students from the entire North-East region of the country. The non-recurring and recurring assistance will be for a period of 5 years. After that the liability for recurring assistance including staff will have to be taken over by the State Government.

Seminar on Futurology Studies

A ten-day National Seminar on Futurology Studies (Science Fiction/Studies in Human Future) will be held at Ranchi (Bihar) from June 1 to 10, 1990. Approved and financed by the University Grants Commission, the Seminar aims at integration of literature and futurology studies at the advance level in order to provide a practical orientation to Science Fiction studies, to provide a base to Futurology studies, to suggest viable modules of a Futurology curriculum at the advance level, to attempt a profile of the frontiers of Futurology and to devise ways and means for advance human resource planning appropriate to impending socio-cultural changes.

Discussions are proposed mainly on the hardcore science fiction of Arthur C. Clarke, Isaac Assimov, Fred Hoyle and Christopher Hodder-Williams.

Further details may be had from Dr. P.P. Dayal, Project Director and Head of the Department of English, Ranchi College, (Ranchi University), Ranchi-834008.

News from Agril. Varsities

College of Fisheries for Narendra Deva Varsity

Dr. U.C. Upadhyay, Vice-Chancellor, Narendra Deva University of Agriculture & Technology, Faizabad, announced that a College of Fisheries would be started from the ensuing academic session. He further disclosed the plan to establish rich Library, Hospital, College of Animal Husbandry and Agril. Engineering. He also pointed out the close linkage of white, blue and green revolution in order to achieve all round development of the farming community. Dr. Upadhyay was inaugurating a two-day Rabi Kisan Mela organised by the Narendra Deva University of Agriculture and Technology at Faizabad. Over 30,000 farmers, extension personnel and students visited the Kisan Mela at which seventy eight stalls depicting various aspects of activities of Agriculture, Animal Husbandry and Rural Development were put up by the different departments of the University, Government, Semi-Government, Private Organizations and Institutions. Farmers were also taken round on field visits by the scientists in order to show the demonstrations on latest agricultural practices.

A Kisan Goshthi was also organised on the occasion at which Sri Awdhesh Prasad, Minister for Harijan and Social Welfare, U.P. was the chief guest. The Minister emphasized the need of organising such type of Melas at block level to benefit the farmers of remotest places. He stressed the need of making Usar Land into productive land and thereafter its distribution among the landless labourers, small and marginal farmers and retired army personnel in order to raise the production. In this connection the Minister applauded the contribution of the University scientists in developing economic and useful models of crop production and agro-forestry in waste and Usar Land.

Mr. Vikrmaditya Pandey, Minister for Urban Development, U.P., also visited the mela on the second day. Addressing the farmers and scientists the Minister said that Usar and Waste Land must be converted as productive land in order to meet the food demand of increasing population. He stressed the need of formation of Land Army (Bhumi Sena) in order to achieve this object. Keeping in view the needs of the farmers of Eastern U.P. having very small holdings, the Minister suggested that low cost technology in raising the production must be evolved by the University scientists. He also emphasised the need to open the college of Animal Husbandry in order to improve the miserable condition of animal population.

Borlaug Visits HAU

"Each country needs to realise its own needs and develop improved food technology to suit its own situation" said Dr. Norman E. Borlaug, Nobel Laureate while addressing the faculty and students of the Haryana Agricultural University (HAU) at Hissar recently. He said, "Though commendable researches are being conducted, there is need for a meaningful technological package at international level. This would help in combining useful information all over the world".

Referring to the importance of extension work for the success of any research results, Dr. Borlaug emphasised upon the close linkages between the researchers and extension workers since linkages between the two were inadequate in all parts of the world. Equally, farmers whole hearted participation was essential. Hence it was imperative that the psychology of the acceptance needed to be inculcated in the farmers in the form of practical demonstrations at their fields, he observed.

Lauding the research work of the scientists, Dr. Borlaug said that it had been possible with their multifarious efforts that today there was no hunger or misery at the food front. How so ever all round progress we may achieve, the economic condition depended upon agriculture. Hs said that the time had come when the economic policy relating to agriculture needed to be given higher priorities in the planning process.

Russian Wheat Scientists at PAU

A there-member delegation of Russian Wheat Scientists led by Prof. Stelmakh a.F., Deputy Director, All Union Plant Breeding and Genetics Institute, Odeson, USSR recently visited the Punjab Agricultural University under the Joint Indo-Soviet Protocol on Agriculture to develop joint research on Breeding of Wheat with Advanced Bakery Qualities and resistance to main diseases.

The visiting Russian scientists had interaction with the university scientists in the Departments of Plant Breeding, Agronomy, Food Technology, Botany, Pathology and Entomology. They also held discussion with the Director of Research, Dr. S.S. Gill who assured full cooperation in this project to the delegates.

Prof. Stelmakh graded the PAU programme on Wheat Breeding Genetics, Physiology, etc. as very strong and wider one with exciting results especially in developing new high yielding varieties which are resistant to the main diseases and are widely adopted.

News from UGC

INSAT-1B Programme of UGC

Between 25th April to 30th April, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

25.4.90

"Corrosion—I"

"Research for Tomorrow"

"Modern Genetics and Human Welfare—VIII : Biotechnology"

26.4.90

"Graphics with Microcomputers—III, Menu Bars, Pull Down Menus, Icons and Windows"

"Glimpses of Glrasia Life—II"

"Consumer Protection"

27.4.90

No Telecast

28.4.90

"UGC Educational Video Festival—II"

"Career in Sports"

29.4.90

No Telecast

30.4.90

"University Round Up"

"The Pursuit"

2nd Transmission

12.00 Noon to 1.00 p.m.

25.4.90

"Cooling With Gunny Bags"

"Biography—An Art"

"Plants in Our Neighbourhood VII"

26.4.90

"Computer Assisted Learning"

"America : Steamboat Spring"

"A Brief History of Tamil Literature"

27.4.90

No Telecast

28.4.90

"Scenic America : Four Faces of a Mountain"

"Indian Stick Fighting—II"

"Black Art"

29.4.90

No Telecast

30.4.90

"University Round Up"

"The Pursuit".

UGC Assistance for Work Study Centre

The University Grants Commission will provide financial assistance to the Centre for Work Study in Educational Administration at the Panjab University, Chandigarh for a further period of five years with effect from April 1, 1990 to March 31, 1995.

The Centre was established with the assistance of the UGC on April 1, 1985 originally for a period of five years for training functionaries of educational administration at different levels in the universities and institutions of higher education in the country. During this period it organised 46 training programmes and trained a total of 801 educational administration personnel from various universities and institutions.

News from Abroad

Strengthening Teacher Training

Education leaders in America have expressed support for two bills that would improve teacher training and recruitment. Testifying before the House Education and Labor Committee, David Imig, executive director of the American Association of Colleges for Teacher Education, praised efforts to recruit more students into the teaching profession. Because minority recruitment efforts won't result immediately in teachers in the classrooms, he also suggested that funds be made available to promote multicultural education for all teachers.

The bills aim to increase the number of students, especially minorities, who enter the teaching profession. The main House bill, H.R. 4130, introduced by committee chair Augustus F. Hawkins (DCA), would provide financial aid to students pursuing teaching careers and loan forgiveness for those who become teachers. Funds would also be given to higher education institutions for recruiting, retaining, and graduating students pursuing education careers and to local education agencies for education reform programs.

An alternative bill, H.R. 3909, introduced by committee member William F. Goodling (R-PA), would provide funds for loan forgiveness for students entering the teaching profession, with greater amounts for those who agree to teach in rural and urban areas. Goodling's bill would also provide grants to state education agencies to train early childhood and elementary school teachers.

"The reality is that the next generation of minority youngsters will be taught by teachers who are white, suburban, and middle class —teachers who need to be far more sophisticated in their understanding of how various children learn, how they are motivated, and how they can perform best in school," Imig said.

A study by the National Education Association and the Department of Education's Office of Education Research and Improvement found that more than 16 per cent of school-age children are black, but only 7 per cent of teachers are black. Similarly, 9 per cent of school children, but only 2 per cent of teachers, are Hispanics

Northern New Mexico Community College President Connie Valdez told the committee that adopting Hawkins' bill could ensure quality education for all children in the future.

"Combating the teacher shortage is a positive step toward improving education for a growing school-age population that projections show will contain significant numbers of Hispanics by the year 2000," Valdez testified.

In a letter to the House committee, American Council on Education President Robert H. Atwell supported H.R. 4130, noting that "enactment of such legislation would encourage high-ability, low-income individuals to enter teaching, thus strengthening the profession."

We Congratulate . . .

(1) **Prof. Pabitra Bhusan Sarkar who has taken over as Vice-Chancellor of the Rabindra Bharati University.**

(2) **Dr. K. Hanumanthappa who has taken over as Vice-Chancellor of the Bangalore University.**

UNIVERSITY OF MYSORE

ACADEMIC STAFF COLLEGE

Manasgangotri,
MYSORE 570 006

ANNOUNCEMENT

Programme of Refresher Courses during 1990-91.

Code	Subject & Thrust Area	Date
	PHYSICS	
RCP 1	Theoretical Physics	23-4-90 to 12-5-90
RCP 2	Nuclear Physics	14-5-90 to 2-6-90
RCP 3	Solidstate Physics	4-6-90 to 23-6-90
RCP 4	Electronics	25-6-90 to 14-7-90
RCP 5	Molecular Spectroscopy	12-11-90 to 1-12-90
	SOCIOLOGY	
RCS 1	Development	May 90
RCS 2	Sociology-General	June 90
RCS 3	Minority Groups	July 90
RCS 4	Social Change	Nov./Dec. 90
RCS 5	Social Problem & Social Welfare with special reference to India	January 91
	ENGLISH	
RCE 1	19th and 20th Century Fiction in English	2-7-90 to 21-7-90
RCE 2	Approaches to Literature and Language Teaching	3-9-90 to 22-9-90
RCE 3	English Language and Literature (General)	3-12-90 to 22-12-90
	KANNADA	
RCK 8	Kannada—General	June 90
RCK 9	Classical Studies	September 90
RCK 10	Comparative and Critical Studies	December 90
	ORIENTATION COURSES FOR NEWLY APPOINTED LECTURERS	
OC 7	.. .. ..	August 1990
OC 8	.. .. ..	October 1990
OC 9	.. .. ..	March 1991

Applications are invited for the above courses from lecturers appointed on permanent basis working in colleges included in the list under section 2 (f) of UGC Act. Application forms and other details may be obtained from the Director.

S.R. Kanakaraj
DIRECTOR

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertation as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

- The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

Anthropology

1. Banerjee, Sharmila. *Changes in the lung functions, working efficiency and body composition with age and sports activity among girls.* Delhi.

2. Hanumantha Rao, D. *Growth pattern of tribal groups in different ecological settings.* Venkateswara. Prof. V. Rami Reddy, Department of Physical Anthropology, Sri Venkateswara University College, Tirupati.

Environmental Sciences

1. Sreekumari, K.R. *Studies on the effect of the organophosphorus pesticide Ekalux EC 25 on the bacterial flora of Villorita cyprinoides var. cochinensis Hanley.* CUST. Dr. P. Lakshmanapermalsamy, Reader, Department of Environmental Studies, Bharathiar University, Coimbatore.

Biology

1. Srisudha, S. *Role of trace elements on the growth and physiology of selected microalgae.* CUST. Dr. P.V. Ramachandran Nair, Joint Director (Retd.), Central Marine and Fisheries Research Institute, Cochin.

2. Vaitheeswaran, M. *Host pathogen relations in root knot nematode infection in a plant host.* Madurai.

Biochemistry

1. Dasgupta, Srimita. *Molecular biological studies on the structure and function of the kinetoplast DNA of the protozoan parasite, Leishmania donovani.* Calcutta.

2 Kamath, Poornima. *Enzyme inhibitors from mango and the role of polyphenols.* Mangalore. Dr. T.N. Pattabhiraman, Prof., and Director of P.G Studies, Department of Bio-Chemistry, King's Medical College, Manipal.

3. Mukhopadhyay, Amit. *Bicohemical studies on the utilization of fructose by Azospirillum brasilense.* Calcutta.

4. Peramma, D. *Comparative study on low and high income group in Kerala with regard to lipids and magnesium status during pregnancy.* Baroda.

5. Ray, Dipti. *Thyroid status in different grades of malnutrition.* Calcutta.

6. Saini, Ram Singh. *Biochemical studies on membrane permeability phenomenon in rust infected wheat leaves.* HAU

7. Sodhi, Sandeep. *Assembly and secretion of casein micelles in lactating bovines.* PAU.

Microbiology

1. Dass, Banarsi. *An experimental approach to develop a method for estimation of relative potency of Russell's viper antivenom serum.* HP.

2. Parekh, Trilokchandra Vithalbhai. *Some physiological and biochemical aspects of halotolerance in helotolerance fungi.* Baroda.

3 Singh, Ravinder Pal. *Biotechnological manipulations for the improved production of ligninolytic enzymes and conversion of lignocellulosics.* PAU.

4. Vora, Kalpitkumar Akshayakumar. *Bacterial metabolism of halogenated benzoates.* Baroda.

Botany

1. Angra, Renu. *Studies on some factors affecting pathogenesis of some cereal hosts by Helminthosporium spp.* Panjab.

2. Bhattacharyya, Mita. *Physical and chemical mutagenesis and studies on root type of some cultivars of rice, Oryza sativa Linn.* Burdwan. Dr. Puspendu Bairagi, Reader, Department of Botany, University of Burdwan, Burdwan.

3. Chandra, Deli. *Toxonomic revision of Indian Anacardiaceae.* Calcutta.

4. Das, Asok Kumar. *Investigation on nutritional and cultural affinities of Volvariella and Coprinus in relation to their interaction effect on yield of paddy straw mushroom and control of Coprinus.* Calcutta

5. Gandhi, Ram. *Mutation studies in Solanum khasianum Clarke.* Jammu. Dr. B.L. Koul,

6. Jethani, Ishwari. *Studies on seed quality attributes in some field crops.* Rajasthan. Prof. Dalbir Singh, Department of Botany, University of Rajasthan, Jaipur.

7. Joardar, Madhumita. *Cytotoxic effect of certain environmental agents on eukaryotic system.* Calcutta.

8. Joseph, P.G. *Development and structure of seed in some members of Scrophulariaceae.* Rajasthan. Dr. Dalbir Singh, Prof., Department of Botany, University of Rajasthan, Jaipur.

9. Sarma, Pradip Kumar. *Studies on the bringing up of young rubber plants, Hevea brasiliensis Muell (ARG) for budding in non-traditional regions of India with particular reference to Assam.* Gauhati. Dr. P.P. Wamanon, Prof., (Retd), Department of Applied Botany and Biotechnology, Gauhati University, Guwahati.

10. Shah, T. *Response of mungbean, Vigna radiata (L.) Wilczek Var Guj 2 to 2-chloroethyl trimethyl ammonium chloride. (CCC).* Baroda.

11. Thomas, Vinoth. *Ultrastructure and histochemistry of pericarps of apocynaceae.* Patel. Dr. Y.S. Dave, Reader, Department of Bio-sciences, Sardar Patel University, Vallabh Vidyanagar.

12. Venkaiah, Malleboyina. *Studies on the vegetation and flora of Vizianagaram District, Andhra Pradesh.* Andhra.

Agriculture

1. Balam Chand. *Management of competitors of spawn of A. bisporus (Lange) Sing.* YS Parmar. Dr. C.L. Jandaik, Mushroom Research Laboratory, Chambaghat, Solan.

2. Chaudhari, Kisan Bhagwant. *The heterosis and combining ability studies in tomato, Lycopersicon esculentum Mill.* Mahatma Phule Dr. D.A. Rane, Ex-Head, Department of Horticulture, Mahatma Phule Agricultural University, Rahuri.

3. El Shahawy, Mohamed Ibrahim M. *Evaluation of some promising insecticides and spray intervals for control of major insect pests of cotton and their effect on yield and quality.* HAU.

4. Jaivir Singh. *Studies on bacterial blight, Xanthomonas campestris pv. cyamopsidis resistance in guar, Cyamopsis tetragonoloba (L.) Taub.* HAU.

5. Joshi, Ajay Kumar. *Nature of gene effects in relation to exploitation of heterosis in Brinjal.* PAU.

6. Loknathan, T.R. *Studies on yield and grain quality characters of rice varieties adapted to salt affected soils.* Kurukshetra.

7. Mathur, Alok. *Pedogenesis of some major soil types in Rajasthan canal command area with special emphasis on salinisation sodiumisation processes.* Kurukshetra.

8. Mathur, Kavita. *Primary and secondary metabolites from arid zone plants of Rajasthan in vivo and in vitro.* Rajasthan. Dr. T.N. Nag, Agricultural Research Station, Rajasthan Agriculture University, Sriganganagar, Rajasthan.

9. Padma, S.D. *Studies on the physiology of mulberry pathogens and contral of mulberry diseases.* Bangalore. Dr. S.B. Sullia, Reader, Department of Botany, Bangalore University, Bangalore.

10. Roy, Ashish Kumar. *Genetical investigations in deep water rice. Oryza sativa L.* Rajendra Agri.

Zoology

1. Diengdoh, Catherine A.R. *Helminth parasite spectrum of amphibian hosts in Meghalaya.* NEHU. Dr. (Mrs.) V. Tandon, Department of Zoology, North-Eastern Hill University, Shillong.

2. Easa, P.S. *Certain aspects of ecology and ethology of the asian elephant, Elephas maximus Linn in Parambikulam Wild Life Sanctuary, South India.* Kerala. Dr. M. Balakrishnan, Reader, Department of Zoology, University of Kerala, Kariavattom.

3. Eugene Mary, V. *Studies on some specialized integumentary glands and behaviour of the Indian musk shrew, Suncus murinus viridescens Blyth.* Kerala. Dr. M. Balakrishnan, Reader, Department of Zoology, University of Kerala, Kariavattom.

4. Gunaga, Vishnudas Ram. *Distribution and abundance of penaeid prawn seed in the Kali estuary, Karwar.* Karnatak. Dr. (Smt.) Kusuma Neelakantan, Reader, Department of Studies in Marine Biology, Karnatak University, Dharwad.

5. Jaideep Kaur. *Studies on nematode parasites of freshwater fishes of Gobind Sagar Lake and its associated waters.* Panjab.

6. Mohamed, K. Sunilkumar. *Studies on the reproductive endocrinology of the penaeid prawn, Penaeus indicus (H Milne) Edwards.* CUST. Dr. A.D. Diwan, Scientist, Central Marine and Fisheries Research Institute, Cochin.

7. Mukundan, M. *Studies on the design, construction and operation of bottom trawls in the shallow waters of Cochin.* CUST. Dr. M. Shahul Hameed, Head, Department of Industrial Fisheries, Cochin University of Science and Technology, Cochin.

8. Sammaiah, Ch. *Ecological studies on the subterranean termites (Isoptera : Insecta) destroying the structural wood of different types of houses and the surrounding trees in Warangal urban system.* Kakatiya. Dr. M. Vikram Reddy, Reader, Department of Zoology, Kakatiya University, Warangal.

9. Sharma, Kavita. *Regulation of male fertility with LH-RH peptides.* Rajasthan. Dr. N.K. Lohiya, Department of Zoology, University of Rajasthan, Jaipur.

10. Sophy John, T. *Studies on nemipterid fishes (Pisces : Nemipteridae) of Cochin Coast.* CUST Dr. M. Shahul Hameed, Prof, Department of Industrial Fisheries, Cochin University of Science and Technology, Cochin.

11. Yatindra. *Studies on histology and histopathology of protozoan infections in local fishes of Rajasthan.* Rajasthan. Dr. B.N Mathur, Department of Zoology, Govt. College, Ajmer.

Medical Sciences

1. Nag, Samir Kumar. *Spirometric and electro-cardiographic studies on non-smakers and smokers of different age groups.* Calcutta.

2. Taneja, Laxmi Narain. *Enhancing the in vitro release characteristics and GI absorption af some drugs via solid dispersion technique.* Baroda.

3. Vijaya Kumar, R.K. *Immunoregulatory processes induced by carrageenan in mice.* Madurai.

Animal Husbandry

1. Deb, Asit Ranjan. *Studies on Eimeria tenella infection in poultry with special reference to incidence and immunoprophylaxis.* Birsa Agri.

2. Ishwar Dayal. *Genotoxic effects of pesticidal drugs in sheep and laboratory animals.* Kurukshetra.

3. Manget Ram. *Effect of supplementing straw based diet with urea molasses, mineral block licks on rumen fermentation pattern, nutrient utilization and growth in crossbred cattle.* Kurukshetra.

4. Mudgal, Padmshree. *Nuclear protein phosphorylation in isolated buffalo sperm chromatin.* Kurukshetra.

5. Naresh Kumar. *Serological and genetical studies on bovine lymphocyte antigens.* Kurukshetra.

6. Nigam, Sanjiv. *Studies on the physico-chemical status of milk lipids from crossbred cattle.* Kurukshetra.

7. Ramesh Kumar. *Studies on fowl spirochaetosis.* JN Krishi.

8. Vanita Kumari. *Effect of dietary fluoride on phosphorus utilization, thyroid function. rumen metabolism and milk constituents of ruminants.* Kurukshetra.

9. Vinod Kumar. *Growth rate nutrient utilization and abomasal N flow studies in crossbred calves fed ammoniated straw supplemented with by pass protein.* Kurukshetra.

CENTRAL INSTITUTE OF ENGLISH AND FOREIGN LANGUAGES

HYDERABAD-500 007

Advertisement No. III/90 **Dated : 28th March, 1990**

Applications on prescribed form are invited for the following posts in the Institute service so as to reach the undersigned on or before 7th May, 1990.

Sl. No.	Name of the Post with scale of pay	Department	No. of posts
1.	**PROFESSOR** (Rs. 4500-7300)	Methods	ONE
2.	-do-	Extension Services	ONE
3.	-do-	Evaluation	ONE
4.	-do-	CIEFL, Regional Centre, Shillong	ONE
5.	-do-	Arabic	ONE
6.	-do-	Spanish	ONE
7.	**READER** (Rs. 3700-5700)	Phonetics & Spoken English	ONE
8.	-do-	Methods	ONE
9.	-do-	Radio, T.V. and Cinematography	TWO
10.	-do-	Correspondence Courses	ONE
11.	-do-	Spanish	ONE
12.	-do-	French	ONE
13.	-do-	German	ONE (Temp.)
14.	-do-	Distance Education (German)	ONE (Temp.)
15.	-do-	Russian	ONE (Temp.)
16.	**LECTURER** (Rs. 2200-4000)	Methods	ONE
17.	-do-	Linguistics and Contemporary English	TWO
18.	-do-	Materials Production	ONE
19.	-do-	Radio, T.V. and Cinematography	TWO
20.	-do-	Regional Centre, Lucknow	TWO
21.	-do-	German	THREE ONE (Temp.)
22.	-do-	French	THREE
23.	-do-	Distance Education—German	ONE (Temp.)
24.	-do-	Russian	ONE (Temp.)
25.	**PROJECT ASSOCIATE** (Consolidated Salary Rs. 3000/-)	Multilingual Translation (German)	ONE (Temp.)
26.	**PROJECT ASSOCIATE** (Consolidated Salary Rs. 3000/-)	Multilingual Dictionaries (Russian)	ONE
27.	**CO-ORDINATOR** (Rs. 4500-7200)	EMRC	ONE
28.	**DY. LIBRARIAN** (Rs. 3700-5700)	Library	ONE
29.	**TECHNICAL OFFICER** (Rs. 2200-4000)	Phonetics & Spoken English	ONE

Prescribed application forms and further details regarding Qualifications etc. can be had from the Registrar, Central Institute of English and Foreign Languages, Hyderabad-500 007 by sending a postal order in favour of Registrar, CIEFL payable at Hyderabad-500 007 for Rs. 2/- (Ps. 0.50 for SC/ST candidates) with a self-addressed envelope (10 x 20 cm) duly stamped (Rs. 2/-) indicating the post which the applicant desires to apply for.

K. Jayashankar
REGISTRAR

Indian Institute of Technology : Bombay

P.O. IIT, BOMBAY-400 076

Advertisement No. E-9/90-91

Applications are invited from citizens of India for the following permanent posts at this Institute, in the prescribed form obtainable free of charge from the Registrar, Indian Institute of Technology, Powai, Bombay-400 076, on request accompanied by self-addressed envelope (25 cm x 10 cm). Persons employed in Government/Semi-Government Organizations or Educational Institutions should apply through proper channel. The post carry allowances such as D.A., C.C.A., H.R.A. as per rules of the Institute which at present correspond to those admissible to the Central Government employees stationed at Bombay. **Depending on qualifications and experience, a higher salary may be offered.** The candidates belonging to SC/ST communities will be given preference. Candidates called for interview will be paid 1st class train fare from the place of their residence and back by the shortest route.

Computer Centre has a fourth generation mainframe computer system (Cyber 180/840). This system forms a major computing resources for the Institute and is accessed through a large number of local and remote terminals. The remote terminals are in the form of PCs/PC-XTs to provide a better computing environment. In addition, the Institute has a number of mini and micro-computing facilities. Steps are under way to set up LANS connecting all these computing resources.

SCALES OF PAY

1. **Systems Manager**

   The incumbent will either be appointed in the pay scale of Rs. 1500-60-1800-100-2000 or Rs. 1500-60-1800-100-2000-125/2-2500 depending on the qualifications and experience of the candidate.

2. **Software Engineer**

   Rs. 1200-50-1300-60-1900.

3. **Computer Engineer**

   Rs. 700-40-1100-50-1600.

All the above pay scales are likely to be revised shortly. Total emoluments on the minimum of the above scales (excluding HRA)

On Rs. 1500/- : Rs. 4775/- per month
On Rs. 1200/- : Rs. 4259/- per month
On Rs. 700/- : Rs. 2829/- per month

1. Systems Manager—Computer Centre (one post)

Systems Manager will be responsible for the overall management of the Computer Centre and will assist the Head, Computer Centre in planning and management of the various facilities at the Centre. Specifically, his responsibilities include :

(a) Supervision of all the operational and maintenance requirements of the Centre.
(b) Interaction with the Computer users.
(c) Regular performance monitoring and tuning of the system(s) available at the Centre.
(d) Software acquisition and installation.
(e) Software development and maintenance.
(f) Planning and conducting short-term courses primarily for the Computer users.
(g) Attending to any other duties/responsibilities as may be assigned by the authorities of the Institute and the Head of the Computer Centre.

The Systems Manager will lead a team of Software Engineers, Operational staff and he may be provided with accommodation on priority basis on payment of licence fee as per the rules of the Institute.

Qualifications

(A) M.E./M.Tech./B.E./B.Tech. in Computer Science or in any field of engineering with good academic record.

OR

(B) M.Sc. in Computer Science/Mathematics/Physics with good academic record.

Experience

The candidate should have at least 10 years of relevant experience, out of which not less than 3 years should be in systems programming/design and atleast 2 years must be in a supervisory position. Some exposure to the internals of a contemporary operating system is essential. Experience with a large time-sharing computing facility and LAN/WAN environment is desirable.

Age Limit : Not exceeding 45 years.

2. Software Engineer—Computer Centre (1 post)

The incumbent, in addition to assisting the Systems Manager will plan and carry out the following duties :

(a) Regular performance monitoring and tuning of the system(s) available at the Centre.
(b) Software installation, development and maintenance—both at the systems and computer network levels.
(c) Planning and conducting short-term courses primarily for the Computer users.
(d) Planning and preparing relevant documentations for the Computer users.

Qualifications

(A) M.E./M.Tech./B.E./B.Tech. in Computer Science or in any field of Engineering with good academic record.

OR

(B) M.Sc. in Computer Science/Mathematics/Physics with good academic record.

Experience

The candidate should have at least five years of relevant experience, out of which not less than 2 years should be in design of system software for large computer systems. Some exposure to the internals of a contemporary operating system is essential. Preference will be given to a candidate having experience in Computer networking.

Age Limit : Not exceeding 35 years.

3. Computer Engineer (two posts)

(One post each for Computer Centre and Department of Computer Science & Engineering. Those who wish to apply for both the posts should apply separately).

The incumbent will be responsible for some of the operational and hardware maintenance requirements of the Centre.

Qualifications & Experience

B.Tech. (Computer Science or Electronics/M.Sc. (Electronics) with good academic record and one or two years experience in design/maintenance of digital systems (including microprocessors, PCs, etc.). Some experience in design and development of system/application software is desirable.

OR

M.Tech. (Computer Science or Electronics) with dissertation work in the above field and good academic record.

Age Limit : 30 years.

Depending upon the availability, the Institute may provide residential accommodation on payment of licence fee, ect. to the selected candidates for the above-mentioned posts.

The last date for supply of the prescribed application form is **18th May, 1990** by post and **25th May, 1990** by hand. All completed applications should reach the Registrar, I.I.T. Powai, Bombay-400 076 through proper channel by **the 31st May, 1990.**

REGISTRAR

MARATHWADA UNIVERSITY

UNIVERSITY CPMPUS, AURANGABAD

Advertisement No. ESTT/DEPT/04/1990 Dated : March 31, 1990

Applications are invited for the following posts in the University Departments and Post-Graduate Centre, Nanded so as to reach the undersigned on or before 10-5-1990. Figures in the brackets indicate the number of posts in each subject. Reservation of posts for S.C., S.T. and N.T./D.N.T. is as indicated in the brackets below the subject concerned.

Professors : Rs. 4500-150-5700-200-7300.

English (1) S.T.
Commerce (1)
Social Work (1) S.C.
Russian Language (1)
Economics (1) S.C.
Dramatics (1)
Bio-Technology (1)
Political Science (1)
Journalism (1)
Industrial Chemistry (1) S.T.

Readers : Rs. 3700-125-4950-150-5700

English (1)
Library Science (1)
Social Work (1)
Chemistry (1)
Economics (1)
Mathematics (1) S.T.
Industrial Chemistry (1) S.C.
Pub. Administration (1) S.C.
Zoology (1)
Bio-Technology (1) S.T.

Lecturers : Rs. 2200-75-2800-100-4000

Russian Language (1) N.T./D.N.T.
Physics (1)
Statistics (1) S.T.
Bio-Chemistry (1)
Botany (2) (One reserved for S.T.)
Organic Chemistry (4) (One reserved for S.C.)
Mathematics (1) S.T.

N.B. : If candidates for reserved posts are not available from particular category, the posts will be filled from other candidates on purely temporary basis.

Age Limit : Professor/Reader : Ordinarily be below 45 years.
Lecturer : Ordinarily be below 35 years.

Relaxable by five years in the case of candidates belonging to backward classes. Age limit can be relaxed in the case of deserving and in service candidates also.

Nine copies of applications together with nine copies each of the testimonials, if any, separately for each post giving particulars in the prescribed form (which will be supplied on receipt of an Indian Postal Order of Rs. 5/- towards the cost of the form) should be sent to the Registrar so as to reach him not later than 10-5-1990. Testimonials should be attested by a Principal of College or Member of the Senate of the Marathwada University or by Gazetted Officer. The prescribed application forms alongwith detailed advertisement containing full particulars of the posts will be supplied to the candidates on request accompanied by a self-addressed envelope (23 x 10 cms.) bearing postal stamps worth Rs. 3/- for the postage seperately for each post.

The prescribed set of application forms for the above posts will be available in the Publication Unit of the University Office.

Candidates who are employed at present must submit their applications through their employers.

Canvassing direct or indirect will be disqualification.

G.Y. Pathrikar
REGISTRAR

AVADH UNIVERSITY

FAIZABAD

Advt. No. 1/1990

Applications are invited from Indian Nationals for the following Posts on prescribed form (in 6 copies) obtainable from the office of the Registrar, Avadh University, Faizabad (U.P.) by sending a self-addressed envelope of size 23 x 15 cms. and crossed Indian Postal Order/Bank Draft for Rs. 15/- payable to the Finance Officer, Avadh University, Faizabad. Money Orders are not acceptable. Application form duly completed should reach the University office latest by 14th May, 1990.

Sl. No.	Name of Post	No. of Post	Scale of Pay
1.	Reader in Dept. of Rural Economics	1 (TLP)	Rs. 3700-5700
2.	Lecturer in Dept. of History and Indian Culture	1 (TLP)	Rs. 2200-4000
3.	Lecturer in Dept. of Solid State Physics (Electronics)	1 (TLP)	-do-
4.	Lecturer in Dept. of Mathematics & Statistics	1 (TLP)	-do-

Note : TLP — Temporary likely to be made permanent.

Qualifications

For the Post of Reader

(i) Good academic record with a doctorate degree or equivalent published work, and active engagement in research or innovation in teaching methods or production of teaching materials; and

(ii) five years experience of teaching or research including at least three years as lecturer or in an equivalant position.

Provided that the requirement contained in sub-clause (ii) may be relaxed in the case of a candidate who, in the opinion of the Selection Committee has outstanding research work to his/her credit.

For the Post of Lecturer

Master's degree or an equivalent degree of a foreign University in the relevant subject with at least 55 per cent marks or its equivalent grade and consistently good academic record.

Explanation—A candidate having obtained either 55 per cent marks in Bachelor's degree examination and second class in Intermediate examination or 50 per cent marks in each of the two examinations separately, is said to have consistently good academic record.

Preference will be given to S.C./S.T. candidates, if otherwise considered suitable by the Selection Committee.

Applications should be accompanied with A/c Payee Bank Draft for Rs. 35/- as application fee and copies of books published, reprints of published research papers and attested copies of the certificates and testimonials. In case of applicants already in service, they should apply through proper channel. Applications received after due date and submitted on plain papers are not acceptable.

Gyan Bajpai
REGISTRAR

ADVERTISEMENT

Applications are invited for the post of Junior Research Fellow/Project Assistant in the U.G.C. sanctioned research scheme entitled "Studies on the cell surface of malignant and normal cell using cisplatin as a probe".

The candidates who have qualified the NET/GATE U.G.C-CSIR test shall be considered for appointment as J.R.F. with Rs. 1800/- p.m. fellowship and contingency as admissible and candidates having only M.Sc. with 55% marks and who have not qualify in the NET shall be considered for project assistant for a period of one year only without any further extension with Rs. 1200/- p.m. as per U.G.C. rules. The candidates having M.Sc. in Zoology/Life Sciences with specialization papers in either cell Biology/Cytogenetic/Biochemistry / Developmental Biology/Membrane Biology/Immunology / Physiology will be preferred.

The application with all the particulars supported by certificates etc., should reach—Dr. S.B. Prasad, Department of Zoology. North-Eastern Hill University, Shillong—793014 within 30 days from the date of this advertisement.

BANARAS HINDU UNIVERSITY

(Advertisement No. 6/1989-90)

APPLICATIONS are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University rules. The retirement age of the University Employees for teaching posts is 60 years and 58 years for non-teaching posts. The appointment will be made on one year probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft/Indian Postal Order/Overseas Postal Order of Rs. 10/- (of Rs. 2.50 for the candidates belonging to Scheduled Caste/Scheduled Tribes category) in favour of the Registrar, B.H.U. towards application fee. Permanent employees of the B.H.U. (including those on probation) are exempted from payment of application fee. **Application form alongwith detailed qualifications will be supplied on receipt of crossed I.P.O./Bank Draft of Rs. 2/- in favour of the Registrar, BHU and self-addressed envelope of 23 cm × 10 cm size carrying stamps of Rs. 2.60.** The University will not defray the travelling or other expenses of candidates called for interview but shall contribute actual Railway fare by shortest route for second class plus reservation charges for sleeper and/or the actual Bus fare from the candidates' normal place of residence. Candidates from outside India shall be entitled to actual Railway fare by shortest route for second class plus reservation charges for sleeper and/or actual Bus fare from the port of entry to the place of interview.

Application for each post be sent separately alongwith attested copies of certificates and marksheets in support of the qualifications and experience mentioned in the application **and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005. India.**

Incomplete application in any respect will not be entertained for consideration. Those who are in service should apply through proper channel. Money Order or Cheque will not be accepted towards application fee.

Reservation: (1) A reservation of 15% in the case of Scheduled Caste and 7½% in the case of Scheduled Tribes will be made in the category of teaching posts upto the level of Lecturers only. (2) A reservation of 22½% (15% SC and 7½% ST) will be made in the category of non-teaching posts at entry level.

The last date for receipt of application in the Office of the Registrar (Selection Committee Section), Banaras Hindu University either by post or by hand will be **MAY 28, 1990.** Applications will be received by hand at the Counter from 10.30 hrs. to 14.30 hrs. on each working day till the last date. No application shall be entertained after the last date from external, in-service employees and the candidates residing abroad.

Note:

1. For Lecturer's post where no specialisation is stipulated, the number of vacancies may increase by the time the Selection Committee meets to interview candidates.
2. Those who have already applied for the posts shown at serial numbers 1 to 10, 15 to 17, 19, 26 to 36, 38 to 40, 42 to 56, 58 to 70, 73 to 82, 84 to 94 and 96 need not apply again. They will be considered according to the qualifications wherever revised. However, they may send 10 copies of their latest bio-data for consideration.

GRADE:

PROFESSOR —Rs. 4500-150-5700-200-7300.
READER —Rs. 3700-125-4950-150-5700.
LECTURER —Rs. 2200-75-2800-100-4000.
(N.P.A. as per rules to Medical Graduates appointed in the Institute of Medical Sciences).
OTHER POSTS—As indicated against each post.

INSTITUTE OF MEDICAL SCIENCES

1. **PROFESSOR OF CARDIO-THORACIC SURGERY** (One)
2. **PROFESSOR OF OTOLOGY** (One)
3. **PROFESSOR OF DENTAL SURGERY** (One)
4. **PROFESSOR OF OPHTHALMOLOGY** (One)
5. **PROFESSOR OF SKIN & V.D.** (One)
6. **PROFESSOR OF PATHOLOGY** (Cytology) (One)
7. **PROFESSOR OF ANATOMY (Neuro-Anatomy)** (One)
8. **READER IN BIOCHEMISTRY (Reproductive Biochemistry)** (One)
9. **READER IN ANATOMY (Histology)** (One)
10. **READER IN CLINICAL PSYCHOLOGY** (One) (Dept. of Psychiatry)
11. **READER IN ORTHOPAEDICS** (One)
12. **LECTURER IN ORTHOPAEDICS** (One)
13. **LECTURER IN MOLECULAR BIOCHEMISTRY** (One)
14. **LECTURER IN PRASUTI TANTRA-STREE-ROGA** (One) (Faculty of Ayurveda)

S.S. HOSPITAL

15. **MEDICAL OFFICER** (Eleven posts)
    Grade: Rs. 2200-4000+NPA as admissible under rules.
16. **CHIEF DIETICIAN** (One)
    Grade: Rs. 700-1600 (pre-revised)

INSTITUTE OF TECHNOLOGY

17. **PROFESSOR OF PHARMACOGNOSY** (Spl. in Pharmacognosy) (One)
18. **PROFESSOR OF CIVIL ENGG.** (One)
19. **READER IN MECHANICAL ENGG.** (Production Engg.) (Three)
20. **READER IN METALLURGY** (Physical/Mechanical Metallurgy) (One) (Centre of Advanced Study in Metallurgy—Department of Met. Engg.)
21. **READER IN MINING ENGG. (Coad Mining)** (One)
22. **READER IN MINING ENGG.** (Opencast Mining) (One)
23. **READER IN MINING ENGG.** (Mine Machinery) (One)
24. **LECTURER IN COMPUTER ENGG.** (One)
25. **LECTURER IN APPLIED MATHEMATICS** (One) **(Reserved for S.C. Candidates)**
26. **LECTURER IN HUMANITIES** (One)

INSTITUTE OF AGRICULTURAL SCIENCES

27. **PROFESSOR OF GENETICS & PLANT BREEDING** (One)
28. **READER IN AGRICULTURAL STATISTICS** (One)

29. **READER IN PHYSICS & MATHEMATICS** (One)
30. **READER-CUM-BREEDER** (One) (under All India Co-ordinated Research Project on Oilseeds), Dept. of Genetics & Plant Breeding.
31. **LECTURER IN AGRICULTURAL STATISTICS** (One)
32. **LECTURER IN ENTOMOLOGY & AGRICULTURAL ZOOLOGY** (One)
33. **LECTURER IN GENETICS & PLANT BREEDING** (Two)
34. **LECTURER IN PLANT PHYSIOLOGY** (Spl. in Plant Biochemistry and Applied Plant Physiology) (One)
35. **LECTURER IN AGRICULTURAL CHEMISTRY** (One)
36. **LECTURER IN AGRONOMY** (One) **(Reserved for S.C. Candidates)**
37. **LECTURER-CUM-JR. SCIENTIST** (Breeding) **(Reserved for S.T. Candidates)** (One) (under All India Co-ordinated Wheat Improvement Project—Department of Genetics & Plant Breeding).

FACULTY OF SCIENCE

38. **READER IN BIOCHEMISTRY** (Spl. in Metabolism, Neurochemistry, Membrance or Enzymology) (One)
39. **READER IN CHEMISTRY (Physical)** (One)
40. **READER IN ZOOLOGY** (Cell Physiology/Biochemistry) (One) (Centre of Advanced Study in Zoology—Dept. of Zoology).
41. **READER IN ZOOLOGY** (Reproduction Biology/Endocrinology) (One) (Centre of Advanced Study in Zoology—Dept. of Zoology)
42. **READER IN ZOOLOGY** (One)
43. **LECTURER IN ZOOLOGY** (One) **(Reserved for S.C. Candidates)**
44. **LECTURER IN ZOOLOGY** (Two) (Mahila Mahavidyalaya)
45. **LECTURER IN THEORETICAL CHEMISTRY** (One)
46. **LECTURER IN PHYSICAL CHEMISTRY** (One)
47. **LECTURER IN CHEMISTRY** (Physical) (One) **(Reserved for S.T. Candidates)**
48. **LECTURER IN PHYSICS** (One) (Mahila Mahavidyalaya)
49. **LECTURER IN PHYSICS** (One) **(Reserved for S.C. Candidates)**
50. **LECTURER IN PHYSICS** (One)
51. **LECTURER IN GEOLOGY** (One) **(Reserved for S.T. Candidates)**
52. **LECTURER IN GEOPHYSICS** (Meteorology) (One) **(Reserved for S.C. Candidates)**
53. **LECTURER IN GEOGRAPHY** (One) **(Reserved for S.C. Candidates)** (Mahila Mahavidyalaya)
54. **LECTURER IN GEOGRAPHY** (One) (Mahila Mahavidyalaya)
55. **LECTURER IN GEOGRAPHY** (Two)
56. **LECTURER IN HOME SCIENCE** (Two—One in Child Development and One in Clothing Textiles) (Dept. of Home Science—Mahila Mahavidyalaya)
57. **ELECTRONICS ENGINEER** (One) (Central Workshop) **Grade:** Rs. 2200-4000.

FACULTY OF ARTS

58. **READER IN HISTORY OF ARTS** (Iconography/Western Art History) (One)
59. **READER IN JOURNALISM & MASS COMMUNICATION** (Spl. in Communication Research, preparation of teaching materials, seminars etc.) (One)
60. **LECTURER IN HINDI (Diploma Course for foreign students)** (One)
61. **LECTURER IN BENGALI** (One)
62. **LECTURER IN BENGALI** (One) (Mahila Mahavidyalaya)
63. **LECTURER IN HISTORY OF ARTS** (One) (Mahila Mahavidyalaya)
64. **LECTURER IN A.I.H.C. & ARCHAEOLOGY** (One) **(Reserved for S.C. Candidates)** (Mahila Mahavidyalaya)
65. **LECTURER IN PHYSICAL EDUCATION** (One) (Faculty of Arts)
66. **LECTURER IN ENGLISH** (One) **(Reserved for S.C. Candidates)** (Mahila Mahavidyalaya)
67. **LECTURER IN SINHALESE** (One)
68. **LECTURER IN GERMAN** (One)
69. **LECTURER IN GERMAN** (One) (Mahila Mahavidyalaya)
70. **LECTURER IN FRENCH** (One) (Mahila Mahavidyalaya)
71. **ASSISTANT LIBRARIAN** (One) (Dept. of Journalism & Mass Communication) **Grade**: Rs. 2200-4000.

FACULTY OF SOCIAL SCIENCES

72. **PANDIT JAWAHARLAL NEHRU CHAIR ON FREEDOM MOVEMENT IN HISTORY** (One)
73. **READER IN HISTORY** (One)
74. **LECTURER IN HISTORY** (Two)
75. **LECTURER IN PSYCHOLOGY** (One)

CENTRE FOR STUDY ON NEPAL—AREA STUDY PROGRAMME

76. **LECTURER IN NEPALI LANGUAGE/LITERATURE** (One)
77. **LECTURER IN HISTORY** (One)
78. **LECTURER IN REGIONAL DEVELOPMENT INCLUDING DEMOGRAPHY** (One)

FACULTY OF MANAGEMENT STUDIES

79. **LECTURER IN MANAGEMENT STUDIES** (Six Posts)

FACULTY OF COMMERCE

80. **READER IN COMMERCE** (Two)
81. **LECTURER IN COMMERCE** (One)
82. **LECTURER IN COMMERCE** (Export procedure and practice) (One)

FACULTY OF LAW

83. **READER IN LAW** (One)
84. **LECTURER IN LAW** (Two—**One post reserved for S.T. Candidates**)

FACULTY OF PERFORMING ARTS

85. **LECTURER IN DANCE** (One) (Mahila Mahavidyalaya)
86. **LECTURER IN KARNATAK MUSIC** (One) (Dept. of Vocal Music)
87. **LECTURER IN INSTRUMENTAL MUSIC (Flute)** (One)
88. **LECTURER IN MRIDANGAM** (Karnatak Music) (One) **(Reserved for S.T. Candidates)**

FACULTY OF VISUAL ARTS

89. **LECTURER IN APPLIED ARTS (Photography)** (One)
90. **LECTURER IN PLASTIC ARTS** (One)

SANSKRIT VIDYA DHARM VIGYAN SANKAY

91. **LECTURER IN VEDA** (One)
92. **LECTURER IN MIMANSA** (One)
93. **LECTURER IN PANCHANGE** (One) (Dept. of Jyotish)
94. **LECTURER IN VEDANT** (One)
95. **LECTURER IN SANKHYAYOGA** (One)

CENTRAL LIBRARY

96. **DEPUTY LIBRARIAN** (One) **Grade:** Rs. 3700-5700.

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University News

MONDAY, APRIL 23, 1990 Rs. 2.50

University Main Arts Building

Standing Committee meets at

GAUHATI UNIVERSITY

On 26th April, 1990

K.K. Handiqui Library

SCHOOL OF CORRESPONDENCE COURSES

ANDHRA UNIVERSITY, VISAKHAPATNAM-530 003.

ENTRANCE EXAMINATION NOTIFICATION-JULY, 1990
ENTRANCE EXAMINATION UNDER MODIFIED SCHEME FOR LIBERALISED ADMISSION INTO B.A./B.Com. COURSES WITHOUT ANY FORMAL ACADEMIC QUALIFICATION

Applications are invited from the candidates residing in India for Entrance Examination for admission into 1st year B.A./B.Com. Degree courses for the academic year 1990-91 through the School of Correspondence Courses.

No minimum qualification is required to appear for Entrance Examination, except that **candidates should have completed 20 years of age by 1-7-1990.** Candidates who pass the Entrance Examination are eligible for admission into 1st year B.A./B.Com. courses in the School of Correspondence Courses only.

Applications will be issued from 12th April, 1990. Duly filled-in applications should reach this office on or before 15-5-1990. Applications received after the due date of 15-5-1990 will be accepted on payment of the penal fee at the following rates:

Upto 17-5-1990 (for first two days)	...	...	Rs. 2/-
Upto 25-5-1990 (between third and tenth day)	...	...	Rs. 10/-
Upto 4-6-1990 (between eleventh and twentieth day)	...	...	Rs. 50/-

Applications received after 4-6-1990 will not be accepted even with maximum penal fee.

Date of B.A. and B.Com. Entrance Examination is 1-7-1990

Under Modified Scheme of Entrance Examination, there will be four papers of one hour duration each and the examination will be conducted in two sessions **on Sunday, the 1st July, 1990 from 9.00 a.m. to 11.00 a.m. and from 2.00 p.m. to 4.00 p.m.** Examination will be conducted in one centre in each district in Andhra Pradesh besides the existing centres in the jurisdiction of Andhra and Nagarjuna Universities.

Intending candidates may write to the undersigned by DESIGNATION for application form, syllabus and model question papers by sending Rs. 10/- by Demand Draft drawn in favour of the Director, School of Correspondence Courses, Andhra University, Waltair along with one self-addressed envelope of 9"x6" size (without affixing postal stamps).

The candidates may also remit cash at the Cash Counter in the School of Correspondence Courses towards application form. **Postal Orders and Cheques will not be accepted.**

The students of Introductory Course of this School need not pay Rs. 10/- towards the cost of application form, syllabus, etc., and also need not send the requisition letter for the Entrance Examination application form. The School will send the necessary application form to the students of Introductory Course. However, the duly filled-in application form should be returned to the School with all necessary enclosures on or before 15-5-1990.

The prescribed application forms, syllabus and model question papers are also available at the following two places at New Delhi and also at our 19 Study Centres on payment of Rs. 10/- through Demand Draft drawn in favour of the Director, School of Correspondence Courses, Andhra University, Waltair-530 003.

PLACES OF SALE OF APPLICATIONS:

(A) **At New Delhi:** 1) Sales Counter, Association of Indian Universities, A.I.U. House, 16 Kotla Marg, 2) Sales Counter, Andhra Pradesh Bhavan, 1 Ashoka Road.

(B) **Study Centres:** 1) Government College, Srikakulam; 2) M.R. College, Vizianagaram; 3) Mrs. A.V.N. College, Visakhapatnam; 4) Government College, Rajahmundry; 5) P.R. Government College, Kakinada; 6) Sir C.R. Reddy College, Eluru; 7) S.R.R. & C.V.R. College, Vijayawada; 8) A.C. College, Guntur; 9) D.N.R. College, Bhimavaram; 10) A.B.M. College, Ongole; 11) Silver Jubilee College, Kurnool; 12) Indian Institute of Management and Commerce, Hyderabad; 13) A.M.A.L. College, Anakapalle; 14) R.S.R.K.R.R. College, Bobbili; 15) Noble College, Machilipatnam; 16) V.S.R. & N.V.R. College, Tenali; 17) Government Degree College, Narasannapeta; 18) S.G.S. College, Jaggalahpeta; 19) S.S. & N. College, Narasaropeta.

The School has no agents and takes no responsibility for the prospectus issued and promises made for admission by any other institution.

Waltair,
Dt. 5-4-1990

Prof. V. Abraham
DIRECTOR

NOTE:
(1) **The age limit has been reduced from 21 years to 20 years with effect from the Entrance Examination of July, 1990.**
(2) The applicants should clearly mention whether they require Entrance Examination Application form for B.A. or B.Com.
(3) The Entrance Examination fee is Rs. 75/-.

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UNIVERSITY NEWS

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

GAUHATI UNIVERSITY

A Brief Introduction

Gauhati University was formally inaugurated on 26 January, 1948 by the then Prime Minister of Assam, late Lokapriya Gopinath Bardoloi, whose birth centenary is being celebrated throughout the country this year. It is one of the few universities in India founded through public donations. The people of Assam, having a distinct socio-cultural identity and having strived for long to mould a national character, struggled for more than three decades for a university of their own and were finally successful in coming out of the academic control of Calcutta University with the establishment of the University at Guwahati. With the avowed aim of "brightening the banks of the Luit (the Brahmaputra)" (the University anthem starts with these very words : "Jilikabo Luitare par"), Gauhati University is not just an institution of learning to the people of Assam, it has a place at the core of their hearts.

With the establishment of the University of Dibrugarh in 1965, the North-Eastern Hill University at Shillong in 1973, and subsequently other Universities in Manipur, Arunachal Pradesh and Nagaland, the original jurisdiction of Gauhati University comprising the entire N.E. Region was considerably reduced. Still the University retains its predominant position as the largest institution of its kind in the Region. The University provides excellent facilities for study and research in all the disciplines of science and humanities, together with engineering and medical education. The University has a special mission in the matter of study of languages, dialects, cultures and civilizations of the large number of colourful, ethnic tribes of Assam and the North Eastern Region. Emphasis has been to intensify the study of the age-old spirit of Assamese life and character with necessary adjustment to the rapidly changing technological present.

Campus

The University campus is located at Jalukbari at a distance of 12 km. from the centre of the city of Guwahati. The campus has all the facilities of a township with a population of about 5000, one-third of which are students residing in the University Halls.

Teaching and Research

The University has six faculties : Arts, Science, Commerce, Law, Medicine and Engineering. 38 postgraduate departments are located on the campus; of these, 21 are in the Arts faculty, 14 Science, 2 Commerce, and 1 Law. There are two medical colleges and two engineering colleges under the University. Research facilities are available in all the disciplines. 13 departments, viz., Applied Botany and Biotechnology, Botany, Environmental Science, Geography, Mathematics, Zoology, Bengalee, English, Folklore, M.I.L. (in Assamese), Political Science, Sanskrit and Philosophy offer M.Phil. courses.

More emphasis has now been laid on restructuring the courses at both the undergraduate and postgraduate levels in the light of latest U.G.C. guidelines. In accordance with the all-India pattern, the University has introduced a uniform 3-year degree course and the syllabi have been constantly updated in all levels.

More than 50 research projects sponsored by various funding agencies like UGC, CSIR, DST, ICAR, etc., are in different stages of completion. Till now, 908 scholars have been awarded the D Phil. degree of the University.

Affiliation

The University has 119 affiliated colleges for undergraduate study; 5 of the colleges have also been permitted to conduct postgraduate classes in a few disciplines.

Admission and Examination

The admission to colleges and postgraduate classes under the University is on merit-basis with strict adherance to the reservation policy of the State Government in respect of scheduled castes, scheduled tribes, other backward classes, etc.

The University conducts as many as 84 examinations in a year. The system of internal assessment has been followed in respect of the professional courses like Engineering and Medicine, Business Administration, Library and Information Science, etc. In all science subjects, practical examinations (both undergraduate and postgraduate) are conducted partly through internal assessment.

Library Facilities

The University Library, named after the renowned oriental scholar and the first Vice-Chancellor of the University, late K.K. Handiqui, has at present a collection of 2,17,390 books and 28,629 periodicals. The number of current periodicals subscribed is 1031 (Science 465, Humanities 284 and others 294). The library has a sitting accommodation for 200 readers.

Innovative Programmes

Academic Staff College

The University has set up an Academic Staff College with assistance from the UGC. The College has been regularly organising Orientation Courses for the newly recruited teachers of the University and Refresher Courses for in-service teachers in English, Commerce and Assamese for the whole of the N.E. Region.

Women's Studies Research Centre

This Centre has been established with UGC's assistance to meet the social commitment of equipping women to fight for their rights against social evils and discriminations.

University Science Instrumentation Centre (USIC)

The USIC, besides looking after the maintenance and repair of various equipments in the science departments, has started a 1-year postgraduate diploma course in Instrumentation to cater to the needs of the region for such trained personnel. The USIC has been interacting successfully with local industries, national laboratories and other institutions. The USIC has also installed XRD and XRF facilities for use by the researchers.

Pre-Examination Training Centre

The Centre, established in 1976, has been regularly conducting teaching and training programmes for various competitive examinations.

Textbooks in Regional Language

The University has been publishing since 1968 textbooks in the Regional Language (Assamese) in accordance with the national policy.

Archaeological Study

The Department of Anthropology has been very actively engaged in the field of archaeological excavations and research to discover unknown facets of early civilization of the Region. The Ambari excavations in the heart of the city of Guwahati have so far revealed tremendous information about the ancient city of Pragjyotishpura.

Archival Cell

An Archival Cell has been constituted in the University with the financial assistance of the UGC since 1985 to preserve the various records and important manuscripts of literary and scientific value. The Cell is also receiving assistance from the National Archives of India for publication of the illustrated manuscripts and preparation of a descriptive catalogue of Assamese manuscripts. The Cell has so far been able to preserve 1500 valuable reports for use by the researchers.

NSS

The University's NSS wing is one of the best in the country. The NSS volunteers from the University have won laurels in the all-India camps. A National Integration Camp was very successfully organised in July 1986.

Chairs and Memorial Lectures

The University has instituted four Chairs : Jawaharlal Nehru Professor in Assamese, Tagore Professor in M.I.L., H.K. Barpujari Professor in Modern History and Guru Nanak Professor in Comparative Religion and Philosophy. Six Memorial Lectures in the memory of Bani Kanta Kakati, Mohini Choudhury, Pratibha Das, Hiranya Bhuyan, Bimala Prasad Chaliha, and K.C. Deb have been held regularly.

Sports and Cultural Activities

The Directorate of Students' Welfare under the guidance of the Gauhati University Sports Board organises various sports, games, fine arts, performing arts and other cultural activities among the students of all the affiliated colleges and the postgraduate classes. The Directorate also sends teams to participate in various all-India meets.

□

AN IDEAL UNIVERSITY SYSTEM

V.P. Saxena*

What is a University ?

University is a system meant for the transformation of a society. This transformation has many facets. But from a global consideration it can be taken as single input and single output device.

Input and Output of the System

First we specify the output of a university system, which gives the idea of the input also. The output of a university system is a 'wiser society'. The society itself is the input. Since an efficient system has its impact on the entire input, not only on a section of it, the efficiency is judged by the following two factors :

(i) Totality of the transformation.
(ii) Quality of the transformation.

In case of a university an input is never exhausted, the processed part of the society is again and again ready for transformation with the passage of time (with renewed content). At each output the quality of the society is better and this process goes on continuously (Figure 1)

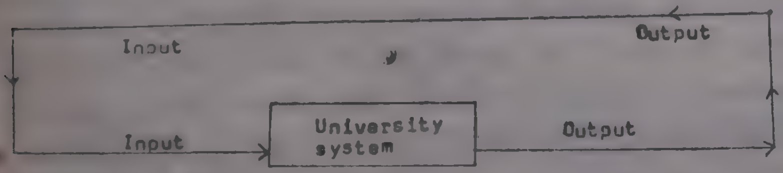


Figure 1

Basis of a Sound System

A sound university system should be based on the following factors :

(i) Socially relevant and progressive disciplines
(ii) Dedicated, Docile and Dynamic faculty
(iii) Fully responsible and sensitive supporting infrastructure
(iv) Continuous academic and financial nourishment
(v) Interaction with other live systems.

Energy and Nourishment of the System

A welfare state and a democratic government provide uninterrupted financial nourishment and a potential of academic confidence to the university system. These two factors in turn produce sufficient energy in the system to make it a source of transformation. The academic confidence is reflected through the head or the top most office of the system. The government can have its probe devices at the input and/or output points for periodic monitoring. It has to play a very judicious role in making an effective total of transformation and its least interference means more academic confidence and self-reliance of the system.

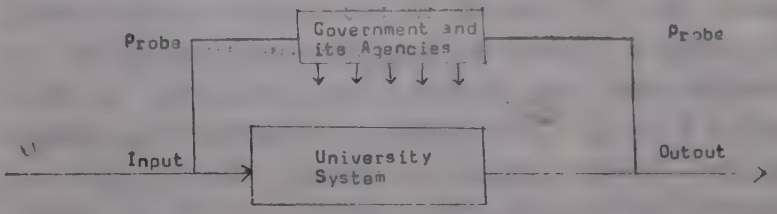


Figure 2

Autonomy of the System

Autonomy is an inbuilt concept in a university system. This autonomy does not mean the independence of the system from the outside world in all respects. It has to be fully responsive to the needs of society in respect of totality of the transformation and quality of the transformation.

At the same time it should have its well organised subsystems such as :

(i) Centres of Studies/Schools of Learning/Teaching Departments.
(ii) Academics/Groups in Specific Areas of Excellence.
(iii) Directorates of Mass Education/Rural Upliftment/N.S.S., etc.
(iv) Institutions of Professional Training/Education.
(v) Societies of Cultural, Sports and Literary Activities.

Autonomous Subsystems

For a healthy growth and function of a university

(*Continued on page 26*)

Professor, School of Mathematics and Allied Sciences, Jiwaji University, Gwalior.

BHATNAGAR AWARDEES

R. Paul Mohan Roy*

Increasingly, Science has become a team work. Yet it is the individual practitioner of Science who keeps the spirit of discovery alive. Even in a collaborative research project there is an individual leader, the moving spirit behind the whole venture. Viewed as a social institution science is promoted by groups of men and women. At national level the leading scientists emerge as an elite group. A study of the status and stratification system within the group can help to evolve a science policy of the nation. Bhatnagar awardees as an elite group among the Indian scientists is the subject of this study.

Scientists in developing countries face many problems, one of which is lack of recognition. Recognition is the first award in the reward system going with science. Every country has instituted prizes for scientists who have distinguished themselves in their field of activity. This simple philosophy of encouraging the Indian scientists during their period of creativity is the motivating factor behind the institution of Bhatnagar Award.

The Shanthi Swarup Bhatnagar prize, instituted in memory of Dr. S.S. Bhatnagar, the founder-director of the Council of Scientific and Industrial Research, is given to Indian scientists below 45 years of age. The objective of the award is to recognise outstanding research work done in any field of science during the years preceding the year of the award. Every year five prizes, each of Rs. 50,000 are awarded to persons who have made a mark in physical, chemical, biological, engineering, medical and earth sciences.

As on 1988 the Council has conferred the honour on 217 individuals and one institution. Indian Institute of Science, Bangalore has produced the largest number of Awardees, 27, followed by Tata Institute of Fundamental Research with 19. At the time of this study 203 are alive and 16 are in foreign countries. A questionnaire, designed to elicit information on their age, posts held, present designation, institutional environment, publications and scope for advancement was sent to 187 individuals. A total of 52 has responded, of which 49 have given their lists of publications.

Though the award is meant for young scientists of 45 years of age and below, there are some rare exceptions in which scientists beyond 45 were considered. The average age of the respondents is 43. The age of each respondent is identified at three levels :

A. Age at which the award is given

B. Age as on 1989

C. Post-award age as on 1989 [B-A]

The publication output, including their involvement in multi-authored papers, of each respondent is counted at three stages :

A. Number of publications before the award

B. Number of publications after the award

C. Number of publications before and after the award [A+B]

Scientific productivity may have different connotations in the world of science. As far as this study is concerned it is hypothesised that the productivity of an individual can be measured in terms of the number of research works of all types (Journal articles, monographs, etc.) published before and after the award. The study strives to find out the relationship, if any, existing between the three levels of age of the scientists and their productivity at different stages in their lives.

The oldest respondent, 77 at present, and having received the award at 50, with a post-award age of 27 years, has published a total of 69 works [39 before the award and 30 afterwards]. The youngest among the living is 44. Having received the award at 42, with a post-award age of 2, he has published 60 works (57 before the award and 3 afterwards). The youngest to achieve the award in his 35th age in 1972 is now 52. During his last seventeen post-award years he has published 87 works, while his publication count prior to the award is 40.

[Study sponsored by the 76th Indian Science Congress held at Madurai in January 1989]

**University Librarian, Madurai Kamaraj University, Palkalai Nagar, Madurai-625 021.*

Figures given in Table 1 show the relation between the age at which the award is given and the number of papers published before the award. The award winning age ranges between 35 and 46. On an average a Bhatnagar Award winner has written and published 62 documents before the average age of 43. Most of them are the result of solo work with no joint author. There is no increasing or decreasing trend with regard to the publication output in this age range of 35 and 46. (Age at the award).

TABLE 1

Age at the time of Award and the average publication-output before the Award

Age at which the Award was received	Number of Awardees	Average publication-output before the Award
35	1	40
36	1	48
37	1	97
38	2	81
39	2	61
40	2	84
41	4	54
42	6	39
43	7	60
44	9	82
45	14	72
46 and above	3	47

According to Table 2, on an average the award winning scientist in India writes 106 papers, both single-authored and co-authored ones. But after the age of 48 the productivity rate shows a steady-state pattern. (see Figure 1 on page 7).

TABLE 2

Present Age and the average Publication-output as on 1989 (Both before and after the Award)

Present Age as on 1989	Number of Awardees	Average Publication-output as on 1989
44	2	70
45	1	72
46	2	86
47	3	96
48	4	98
49	5	99
50	4	108
51	5	102
52	5	107
53	4	108
54	2	112
55	2	115
56	2	120
57	2	123
58	1	126
59	1	118
60 and above	6	128

Table 3 shows the relation between the post-award age and the average number of publications after the award. According to this table it is inferred that a Bhatnagar awardee publishes only 44 works after the award. The increasing trend seen in the beginning, with 16 papers during the first two years, rises upto 64 papers at the eighth year of the award. Thereafter, that is, from 9th year onwards, a steady-state pattern has set in. Nine years after receiving the award, that is, beginning from 52 years of age, (43+9) the production curve flattens. (see Figure 2 on page 7).

TABLE 3

Post-Award Age and the Publication-output after the Award

Post-Award Age as on 1989	Number of Awardees	Average Publication-output after the Award
2	2	16
3	3	18
4	8	24
5	2	32
6	3	34
7	3	46
8	4	64
9	3	68
10	5	65
11	4	62
12 and more	15	58

It is thus seen that in the life of a Bhatnagar awardee three stages are marked. Upto the age of 48 he is more productive in terms of solo research and single-authored papers. Between 49 and 52 he moves up and finds a place in team research. After 53 he is a recognised leader and he is called upon to contribute more actively by being appointed as heads of institutions or projects.

This does not mean that the active period in the life of a scientist comes to an end at the age of 52. All the respondents have pointed out the fact that, after the award, their chances of being drafted into, or organising, team research have increased. This means that after the award, though their publication-count is comparatively less, they have published more number of co-authored papers than single author ones. Once recognised and acknowledged as an elite, the leaders reach positions of prominence and play an effective role by becoming leaders of research teams.

Analysing the data on publications it is found that each individual has published more articles in foreign journals. As they enter into their second and third stages of life, publications in Indian journals are nil. Science and scientific communications become international, and Indian scientists, like their counterparts abroad, play an equal role in International science communication system. One scientist for example, who received the award at the age of 44, now in his 67th year of age has contributed 318 articles, all jointly authored (30 before and 288 after the award) to foreign journals.

Next to publication count, the number of times an author's paper is cited by others is a measure of that author's impact on his peers. Of the 52 respondents, papers written by 5 awardees have been adjudged as citation classic by the Institute for Scientific Information, Philadelphia. (Information on this with regard to the non respondents is not readily available). Among the Bhatnagar Awardees these five scientists can be called the 'elites among the elite group', since their impact is visibly demonstrated by becoming authors of citation classic.

The higher the elites climb in their field of speciality the more they are involved in the science communication system. This norm is no exception to Indian scientists. Among the 52 respondents 43 were elected to the editorial boards of one or more journals. It is a clear indication of having become more 'visible' in the professional life with an assigned role to control the science information system. The solo research, inevitably enough, decreases with age while involvement in team research and scientific literature production have increased.

On the basis of their present age and productivity, as discussed earlier, the respondents were divided into three age groups : (1) 48 and below; (2) Between 49 and 52; (3) 53 and above. Their scope for field and job mobility are tabulated in Table 4. It shows that 7 members out of 12 in the first group have found opportunities to shift to a new field of activity while the rest, namely 5, stick to their original one. This trend shows that the younger generation in the age group of 48 and below are living in a more opportune time that enables them to switch to a newer field. In line with the modern fragmentation of science, the young scientist in India develops interest in a new and emerging field at micro level and begin to specialise it.

TABLE 4
Scope for field and job mobility

Present Age group as on 1989	Number of Awardees	Field mobility		Job mobility	
		Yes	No	Yes	No
48 and below	12	7	5	3	9
49—52	19	4	15	2	13
53 and above	21	4	17	3	18

The data on job mobility show that majority of the awardees in the research institutes like Indian Institute of Science, IIT's and Tata Institute of Fundamental Research have at one time or another served in the Universities. Job mobility from Institutes to Universities is totally absent. After the award, vertical growth in the same institution is the order. But professional elevation is not attributed as an aftermath of the award. The uniform opinion on this is that they have earned it.

There is a mixed feeling about scientists becoming administrators. A small minority believe in self-actualization as a developmental process in the life of a scientist and they want scientific Institutes to be headed by the 'leader'. But the majority opinion supports the popular belief that direct involvement in science administration suppresses or even kills the creativity in a scientist. According to one respondent, "a scientist who ceases to be creative is fit to become an administrator".

In conclusion, the research environment in which the Bhatnagar awardees live and their attitude to science may be summed up as follows :

The productivity in terms of publication-count declines from the age of 49. It is in their first phase of life upto the age of 48 that they are more active in solo research. After 52 they begin to involve more in administration work, "reluctantly". After the award more recognition comes in their way not because of the award, but because of their own merit and qualitative output.

A scientist continues to serve for the cause of science as he grows in age—research scholar, solo author, member in a team research, co-author, project director, director of an institute, finally science policy maker in the Government. Restricting the prize to scientists below 45 years limits, or even denies, the elder scientist's scope to achieve recognition. To the genuine scientist knowledge grows with age. Excellence in science can be reached at any age. Measures such as citation classic to scale the true impact of an individual need considerable time to lapse. Taking this view, the CSIR may cast a second look at the present policy of awarding the prize to scientists below a particular age. To make it truly national in scope, the Council can redraw the eligibility criteria in which age is not a bar for an Indian scientist to be considered for the nation's prestigious award for science.

Of the 217 awardees as many as 182 come from research institutes other than universities. Traditionally research in the universities has been identified as "basic" and research in Government sponsored institutes and centres as "applied". According to this yardstick it is found that more number of awards are given to applied research. To recognise the contributions made by the universities the Council may consider granting awards to scientists contributing to basic research.

Figure 1 Present Age and the Average Publication Output

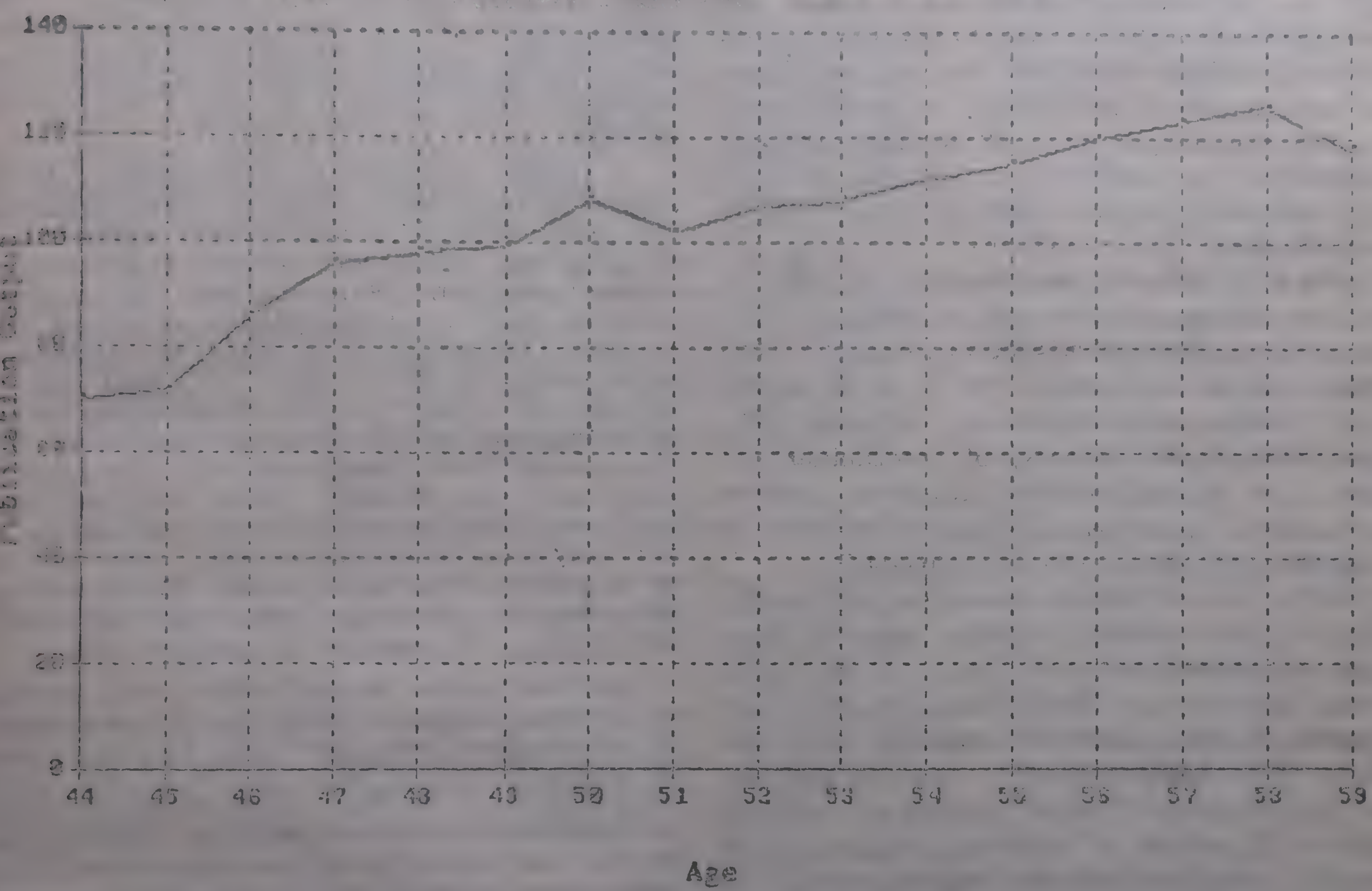
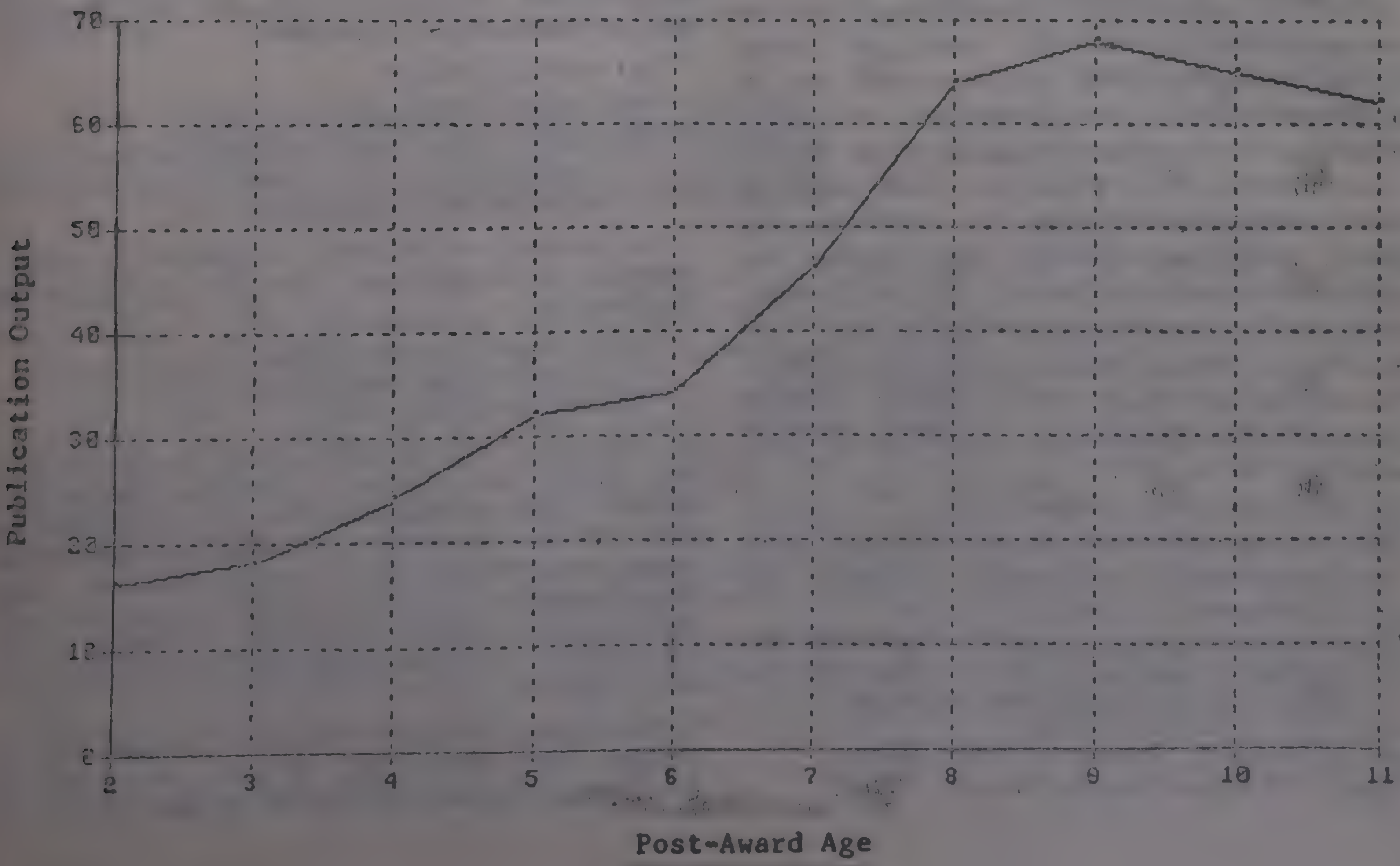


Figure 2 Post-Award Age and the Publication Ouput after the Award



NEHRU AND SCIENCE

Y.P. Kohli*

Pandit Jawaharlal Nehru was one of the key figures of this century. He symbolised some of the major forces which have transformed our age. He dedicated his whole life not only to the struggle for independence from colonial rule but also to democracy and equality of opportunity, to the obliteration of poverty and hunger, above all, to humanism : to the dignity of men; and for it, he chose the path of science and technology to achieve all round development of India.

Addressing Indian Science Congress on Dec. 26, 1937, he said "Science is not only a pleasant diversion and abstraction but it is the very texture of life, without which our modern world would vanish away. I believe, science alone can solve the problems of hunger and poverty; of insanitation and illiteracy, of superstitions and deadening customs and tradition, of vast resources running to waste, of a rich country inhabited by starving people".

For him, science was not merely an individual's search for truth but it was the single powerful force which could build or destroy society. In the Indian Science Congress on Jan. 3, 1947, he said "the objective of science must be to remove the ills of the society. For a hungry man, God has no meaning. Our country has millions of hungry and starving people and to talk of truth and God and even of many fine things is a mockery. We have to find food for them, clothing, housing, education, health and so on—all the absolute necessaries of life".

He believed in science as a vehicle for deliverance from the miseries that humanity faced. He recognised long ago that political freedom would be incomplete without economic independence and economic independence would be beyond the grasp without science and technology. Nehru gave full responsibility of nuclear technology and its application for economic development to Dr. Homi Bhabha who established first nuclear reactor APSARA at Trombay in 1956. Bhabha Atomic Research Centre was started at Bombay for training graduate engineers and scientists in different aspects of nuclear science. India's nuclear research programme has the following objectives :

(a) generating electrical energy,
(b) utilizing radio isotopes for bringing about improvements in industry, medicine, and agriculture,
(c) using underground nuclear explosions for exploiting resources of Mother earth and for civil construction purposes, and so on.

Likewise, pioneering steps were taken to provide research facilities in agriculture, forestry, medicine, space and basic sciences. The initiatives of constructing huge dams like Bhakra-Nangal, Damodar-valley etc. and setting up large steel mills and other large plants, were taken by the first Prime Minister of India.

At the first conference of Nonalignment Movement at Belgrade, Nehru, Sukarno, Nasser with their colleagues—called for a halt to the nuclear race. Long ago, he realised the ignoble application of science in the form of horrors of war. In his letter to his daughter Priyadarshani Indira on July 14, 1933, he wrote "War today, is an affair of mechanised tanks, aeroplanes and bombs............what will be the result of all this ? Universal destruction, the end of the fine structure of culture and civilization that centuries of efforts have built up". Wars earlier were limited and localised. World wars and even 'total wars' touched only a portion of the globe. A war today involving nuclear weapons, would leave no nation untouched, no form of life would survive. More than 41 years ago, Nehru was the first statesman to appeal for a suspension of nuclear tests.

For him, science was not merely the discovery of the secrets of nature, not only a kind of handmaiden to make the man's work easier; thus adding wealth of the nation and creating better conditions; but much more than that. For him, the spirit of science meant not only accepting the fresh truth, not only improving the old but being prepared to upset the old if it went against that spirit. In his speech at the opening ceremony of the Fuel Research Institute, Digwadih on April 22, 1950, he said—"Science teaches us new ways of doing things................the basic thing that science should do is to teach us—

(a) to think straight,
(b) to act straight, and
(c) not to be afraid of discarding anything or of accepting anything; provided there are sufficient reason for doing so."

In his speech at centenary celebration of Madras Government Museum on Nov. 27, 1951; quoting Wordsworth—

"A primrose by a river's brim
A yellow primrose was to him
And it was nothing more"

he explained, "the greatest danger in the world is that people, in their zeal to specialise, lose all perspective. They become specialists at a particular job and very fine specialists at that but they lose the larger view of things. They bring to mind the botanist who studies the Latin names of flowers but loses all sense of the beauty of flowers. In other words, we become experts in something but lack wisdom in every thing else."

For Nehru, the most vital and hopeful of the changes that science had brought about, was the development of scientific outlook in man. □

**Deptt. of Chemistry, Jawaharlal Nehru College, Pasighat, Hill-Top, Arunachal Pradesh-791103.*

The Economy : Some Issues for Planning and Policy

Eminent monetary economist, Shri M. Narasimham, former Governor of the Reserve Bank of India, delivered the Convocation Address at the Fourth Convocation of Sri Krishnadevaraya University, Anantapur. Shri Narasimham said, "The people of India are clearly entitled to better returns for their savings and the sacrifice of consumption that this rate of saving entails. If productivity of capital is to be enhanced, i.e., if incremental capital output ratios are to be lowered, we need to look afresh at the priorities of investment by giving greater weightage to agriculture and small and medium industry. Doing so would not only improve capital efficiency and enhance growth but also enlarge the area of employment per rupee invested and help in the objective of expanding the supply of wage goods and improve the physical quality of life of our people." Excerpts

Convocation

The country's economy is poised today at an interesting stage. We have just completed a decade in which the growth rate of the economy has averaged a little over 5 per cent per annum. This is, by any reckoning, an impressive achievement and marks a decisive break from the average of 3.5 per cent annual growth that marked the first three decades of our planning endeavours. The per capita growth rate in the decade of the Eighties works out to about 3 per cent which again represents a doubling of the rate of the previous 30 years. The growth that we have achieved is also reflected in the significant development of the agricultural sector, especially in the Seventies and the Eighties, where, as a combined result of both infrastructural and on-farm investment and the application of the new technology centered around assured water supply, the use of high yielding varieties of seeds and fertilizers, we have achieved an expansion of foodgrains production ahead of the population growth rate and, in fact, attained at existing levels of consumption, self-sufficiency in foodgrains in a normal year. In industry, we have now a well diversified structure and are self-sufficient in almost the entire range of consumer goods while over a large area of capital and basic goods we are reasonably so, though there can be no gainsaying that we have achieved this at a rather high economic cost and that our technology needs considerable updating over large areas of industry. Infrastructure development has also shown remarkable growth though the demand for infrastructural services, especially in sectors like power, continues to outstrip the considerable augmentation of supply.

There is thus some ground for muted self-congratulation in respect of our growth performance and for the expectation that the base that we have created would propel us into faster growth. However, there are also areas of concern both in respect of structural and conjunctural factors affecting the economy.

Taking structural issues first, if the growth performance in the Eighties were decomposed into sectoral contributions, one important feature stands out, namely that the material product sectors of agriculture and industry have between them contributed only about half of the increment in domestic product, the balance being accounted for by services. In agriculture, for instance, the average growth rate in the decade of the Eighties is not much higher than in the Seventies and though industrial production certainly grew at a decidedly faster rate than in the Seventies, the growth in these two sectors is not of an order that would explain the enhancement of the aggregate annual income growth by nearly a third in the decade of the Eighties compared to the previous three decades. While the services sector accounts for a significant proportion of the incremental output, economic services could not have grown at a rate much above material product and a significant element in services growth has, therefore, been non-economic services, such as defence and routine administration.

This sectoral composition of our growth in the Eighties explains why despite the higher growth rates overall, the standard measures of well-being have not shown the same order of improvement. If our material product output had increased by more than it did, it should have been reflected, among other things, in larger availability of basic wage goods and other items. However, data on per capita consumption of foodgrains and cloth show hardly any increase in the decade. This fact suggests, following the logic of Engel's law of consumption that income distribution has not improved significantly. If one were to extend this line of argument to social services indicated by the growth in literacy, in the number of children enrolled in primary schools and in the proportion of the population with access to safe drinking water and primary health care and the like, one can see that the improvement in the growth rate has not been fully translated into an improvement in the availability of basic goods and social services. The population continues to grow at around 2 per cent per annum reflecting inadequacy of family planning and health care services. The literacy rate is still under 40 per cent, infant mortality ratios still are not much below a hundred per thousand live births, morbidity rates are high and access to safe drinking water covers less than two-thirds of the population. Incidentally, a telling commentary on our priorities is that a larger proportion of our population is now covered by TV and radio than has access to safe drinking water. Though the proportion of the population living below the so-called poverty line is estimated to be smaller now at 30 per cent, it is still high and the number of absolute poor more than two decades ago. Growth has virtually bypassed them and the malignant shadow of poverty characterised by malnutrition, illiteracy and ill health mars their lives. Growth has not also been able to absorb fully into gainful employment the additions to the labour force especially in the rural areas. Lack of employment opportunities and incidence of poverty are not unrelated factors.

Therefore, though we may derive some satisfaction at the quantum of growth in the last decade, our experience has also emphasised that the content of growth is at least as important as its quantum, if growth is to be translated into a measurable improvement in the physical quality of life for the significant proportion of our population that is now denied this. For them, though the economy has been growing faster, they have not been able to live perceptibly better. Growth would have no meaning if it did not provide for improvement in material well-being for the majority of our population. It is for this reason that we should continue to stress that growth should be accompanied by social or distributive justice. Distributive justice in our case will call for an enhancement of the supply of public consumption goods on the one hand and the creation of incomes to the poor and underprivileged or in the phrase of Prof. Amartya Sen, entitlements through provision of gainful employment and other sources of income generation so that the bulk of our population would be able to afford wage goods and receive public consumption goods. The equity dimension should always, therefore, figure in our discussion of growth.

While this is so, there are certain other issues which would need to be addressed as an extension of the equity dimension. Thus, if we were to look at the occupational structure of our population, we notice that over the period of planning, there has not been any perceptible reduction in that proportion of population dependent on agriculture and allied activities. It still is around 70 per cent. On the other hand, whereas at the time we initiated planning the share of the primary sector was as much as half of our national product, it now is less than one-third. What this means is that the same proportion of the population is now having to make do with a much smaller share in the national product—admittedly a larger national product. This at once reveals the widening of the disparities in income levels between those dependent on agriculture and the rest of the population. When one adds to this, the observation that even within agriculture, the pattern of agricultural growth has been somewhat skewed in favour of the large and medium sized farmer and the landless labourer the disparities get sharper. In fact, if anything, the average size of land holding has come down sharply and, to this extent, reveals a further skewness in assets holding pattern in the rural sector. The benefits of irrigation have also not flowed fully to all strata of farmers and water management remains a serious problem not only from the point of view of economic efficiency but also equity. Similarly, the agricultural growth following the induction of the new technology or the green revolution as it has been called, has been localised in the North-West of India and in certain other pockets as in some districts of Andhra Pradesh. Central and in particular Eastern India, on the other hand, have until very recently not shared in any worthwhile degree in the agricultural expansion. These regions also happen to be the more populous parts of the country and one where average rural incomes are already low. This has, in turn, aggravated regional disparities in rural incomes led to some concentration of the rural poor in these regions. Dry land farming areas also have largely been outside the ken of the improvements in agrarian technology. Unemployment, especially in the rural areas continues to be significantly high while urban unemployment, especially amongst the educated is an indication of the inability of the organised industrial sector and services to absorb the addition to this segment of the labour force even as it indicates a measure of lopsidedness in our educational system.

The industrial economy also reveals a measure of imbalance. The growth in basic industries has been slower than overall and industry continues to be bedevilled by inadequate power and transport, to name the two most important infrastructural supplies it depends upon and there is still in many sectors considerable under-utilisation of capacity. The industrial economy built up behind strong protectionist walls under a strategy of import substitution has also developed technological obsolescence and a high cost structure.

These are some of the structural aspects of our economy which demands urgent attention. Our agenda in the years immediately ahead is to consolidate the growth performance while effecting a qualitative transformation in its content by addressing structural issues, the most difficult and obdurate of which is the widespread and endemic poverty.

This would call for a re-statement of objectives in relation to growth and equity, a re-allocation of priorities and necessary consequential policy changes.

Let me first address the question of the quantum of growth. While it is quite legitimate to insist that growth should be accompanied by efforts at improving social justice, it would be going to the other extreme to question, as some responsible persons seem to be doing, the primacy of the growth objective itself. It is perhaps tempting to deride those asking for higher growth rates as indulging in a numbers game and to point out that growth has not so far trickled down to the bulk of the population. This, however, misses the point that while distributive justice is undoubtedly important, unless there is sufficient growth, there will not be enough to distribute. As Abraham Lincoln said long ago, you cannot strengthen the weak by weakening the strong. As the elimination of poverty cannot be made to depend on a trickle down effect, the answer is to mount a direct attack on poverty through meaningful schemes of employment and income generation, both in the rural and urban areas. This obviously needs massive resources and it is only through an acceleration of growth that we can hope to expand the pool of resources. Indeed, our objective of poverty amelioration has little chance of success if the economy does not grow adequately and provide the wherewithal for undertaking investment and other expenditures related to this objective. There should, in fact, be no conflict between the objective of higher growth and that of distributive justice. Far from being regarded as competing objectives they should be made mutually supportive.

Growth, to put it simply, is a function of the rate of savings and the productivity of capital investment financed by such savings. Our savings rate now is around 21 to 22 per cent of our gross domestic product. This is respectable by any standard but remarkably high for a low income country with an unregimented society. The mainstay of our savings is the household sector and the level of savings represents the sacrifice of consumption that a poor country has made. Corporate savings are small while the Government sector has been registering negative savings rates, leading in consequence to some 'stagnation in the aggregate rate in the last three or four years. Increasingly the savings are in financial and hence mobilisable forms reflecting the process of financial intermediation largely as a result of the spread of the branch network of the nationalised banking systems.

If in spite of this savings rate the economy has not grown as fast as it could and should have, it has been due to the low productivity of our capital investment measured by the behaviour of the incremental capital output ratio. We have had disturbing evidence of a decline in the productivity of capital in several sectors of industry. Under utilisation of capacity and low industrial productivity are something which a capital scarce economy can ill afford. The high incremental capital output ratio has also been due to the sectoral composition of investment with a strong weightage towards long gestation capital intensive schemes in infrastructure and basic industry but equally and, some believe even more, due to managerial inefficiencies in the planning, implementation and operation of our investment projects. Extra economic considerations have come in the way of rational location and optimal size of projects. Inadequate funding has made us spread our resources wide and thin, thus lengthening the time before investments yield returns. Meanwhile costs keep mounting further aggravating the situation. Often the shortage of resources leads to inadequate complementary investment again denying us the benefits of the initial investment. Transmission systems in power and distribution channels in irrigation are cases in point. Poor operational efficiency of investment projects has been another problem. Thus, in our power and irrigation systems this is reflected in low plant load factors even compared to what we achieved in the past and inefficient water management. One could cite other examples. The people of India are clearly entitled to better returns for their savings and the sacrifice of consumption that this rate of saving entails. If productivity of capital is to be enhanced, i.e., if incremental capital output ratios are to be lowered, we need to look afresh at the priorities of investment by giving greater weightage to agriculture and small and medium industry. Doing so would not only improve capital efficiency and enhance growth but also enlarge the area of employment per rupee invested and help in the objective of expanding the supply of wage goods and improve the physical quality of life of our people.

The objective of consolidating and stepping up our growth rates therefore, calls for a continued emphasis on enhancing our savings rate primarily by cutting down and later eliminating Governmental dissaving on the one hand and rearranging investment priorities and reorganising project planning, implementation and management to enhance the productivity of capital on the other. Top priority should be given to the consolidation of previous investment by completing on-going schemes before undertaking, on a large scale, new commitments and on undertaking necessary complementary investment to obtain the full benefits of investment already undertaken. It also calls for improved managerial efficiency in operating projects. An improvement in the efficiency of investment is an effective substitute for fresh investment and would help to release resources for investment elsewhere. At the same time better utilisation of resources through improved and more equitable water management in agriculture, extension work, vocational training and other aspects of human resource development are possible. These represent in a manner of speaking, the software of better organisation rather than the hardware of investment.

The objectives of investment planning in the context of improving the material well-being of the mass of our population in the next five years should aim at increasing the per capita availability of foodgrains and cloth by at least 20 per cent each, reduce illiteracy to 40 per cent and seek to provide safe drinking water and primary health care and family welfare services to cover at least 75 per cent of our population and reduce the proportion of population below the poverty line as defined now to no more than 20 per cent. Over the decade, i.e., by 2000 AD, the aim should be to see that there would be no one below the poverty level, to achieve near universal literacy, to extend primary health care and access to safe drinking water to all the villages and bring down the population growth to about 1.7 per cent for if population growth is not reduced all our other efforts at improving our standard of living would be in vain.

The present occasion appears to me to be an appropriate time for us to take this important turn in our planning and economic policies. We have a new Government committed to certain socio-economic objectives centered around improving the content of growth and we are on the eve of embarking on the Eighth Plan. It gives us a chance of incorporating ideas for meaningful structural changes even as we undertake short and medium term adjustment measures to subserve our objectives of growth and equity alongside relative price stability and progress towards external viability.

If the objective is maintaining and even enhancing the Seventh Plan growth rate of a little over 5 per cent alongside emphasising distributive aspects, it would call, as observed earlier, for some reordering of the priorities of investment. If our objective of ensuring a minimum basket of wage goods and basic needs have to be met, it would call for investment to be so oriented as would enhance the supply of these goods and services to meet the enlarged demands which policies of providing entitlements to the poor would generate. In the first instance, it would call for continuing primacy to be placed on enhancing food production as well as cloth, and on enlarging availability of social services, especially education, health care (including family planning) and provision of safe drinking water. The emphasis on foodgrains and on supplementary foods like vegetable oils, sugar, fish, poultry and animal proteins calls for reorientation of investment priorities to and within agriculture. It happens to be the case that barring large scale irrigation projects, which are capital intensive, and in any case not easy to operate and manage, the capital output ratios in medium and small farm production and investment including minor irrigation is generally low. The new agricultural technology revolves around water. It is also scale neutral in the sense that the small farmer can adopt it with equal advantage compared to his larger counterpart and with proper security on tenure through land reform, adequate availability of credit rather than subsidised credit, the small farmer can be helped to produce beyond his subsistence level and for the market. Agricultural development also calls for greater attention to be paid to Central and Eastern India and to the dry land farming areas and drought prone areas such as Rayalaseema in our State. The potential for growth in these regions is considerable with a proper package of technical and credit inputs. These areas also represent the poorer agrarian regions. The extension of the new technology in this manner would both enhance agricultural output and help to redistribute incomes in the agricultural sector. Such extension of the new technology would call for greater involvement of credit institutions as well as State support through provision of infrastructural services. As regards landless labour the approach should be to provide gainful on-farm employment—the new technology also is labour intensive—and undertake massive rural works programmes involving such aspects as minor irrigation and land development and other aspects of rural infrastructure such as rural roads which would in turn enhance agricultural productivity as well as involve landless labour in wage employment. This is of particular significance for the dry farming and drought prone regions and areas that contain a fair share of waste land—areas where the incidence of poverty is quite acute. This would mean a rationalisation and reorganisation of various poverty related employment schemes like the NREP and others but with the focus on generating employment even while adding to capital assets so as to enable enhancement of agricultural productivity. It also calls for providing opportunities for landless labour in income generating activities in occupations like animal husbandry, poultry farming and other activities allied to agriculture, in post harvest processing and in a variety of service trades for which an expanding rural sector and improved incomes would generate a demand. These were some of the postulates behind the various Government sponsored rural employment schemes and the IRDP but these schemes unfortunately have failed to make the needed impact owing to politicisation and faulty administration and have led to leakages and abuse. The effort that is needed now is to tighten up the schemes with a more direct nexus between the expenditure incurred on the one hand and the employment and income generation aspects on the other by eliminating political interference and undertaking investment and providing finance to enhance productivity of assets. The proposed Constitutional Amendment embodying the right to work presents an appropriate opportunity to reorganise our employment oriented schemes in this fashion. Current proposals for decentralisation in planning and implementation of development schemes points in the right direction in this regard provided that the rural elite in the socio-economic and political structure in the panchayati raj areas are prevented from appropriating the benefits to their advantages and to the detriment of the intended beneficiaries. With this strategy in agriculture the twin objective of growth and equity could be addressed.

As regards availability of cloth, we have a choice between emphasising decentralised modes of production if we were to pursue only the employment objective and enlarging the quantum of availability through the modern sector, i.e., mill and power looms if we are to concentrate on the consumption objective. On balance there is much to be said for opting for the latter and seeking to achieve the employment objective through the type of activities mentioned earlier.

What this calls for, in sum, is to fix minimum targets of growth (based on objectives of consumption expansion) in respect of the material product and basic needs sectors and to plan for an enlargement of the supply of basic wage goods and social services. The growth rates in agriculture, textiles and social services should be separate growth objectives related to our objectives of poverty alleviation and improvement in indices of physical quality of life. In short, the Plan has to be structured around creating the demand for wage goods and social services and matching this demand through enhanced supply and reorient investment to this end. In agriculture if the growth rate in terms of value added were around 3.5 to 4 per cent and in industry about 8 to 10 per cent—certainly not unfeasible targets—the material product sectors could contribute to an increase of not less than 3.5 to 4 per cent of GDP which should make the aggregate growth figure reach 5.5 to 6 per cent, with, at the same time, a more direct and visible impact on material well-being through affirmative action in respect of income and employment generation as part of efforts at poverty amelioration. The significance of this approach lies in its turning around the syllogism on which our planning has been based so far. Instead of growth rates determining final consumption levels (through assumed income or expenditure elasticities) overall growth rates would now be derived from final consumption targets and income targets would more appropriately be related to per capita material product requirements.

Given these priorities the investment pattern should also be so articulated as to make possible the funding of the infrastructure in agriculture primarily by the public sector, leaving the superstructural investment in agriculture to be either self-financed or provided by credit institutions to meet the objectives of enlarged agricultural production. The other area of priority should be an enlargement of programmes for providing public consumption goods like education, health and access to safe drinking water. This too would primarily be the responsibility of the public sector. Social services meet essentially local needs and if we are to invest our ideas of decentralised planning with substance, we should try to make the local authorities respond to felt and articulated local needs to the extent possible by raising local resources to be supplemented, where necessary and appropriate, by devolution of funds from the higher tiers of Government and administration. This would call for drawing up, based on local level experience, concerted and integrated plans for the expansion of social services rather than leave it, as now, to ad hoc decisions at the higher tiers of administration.

As far as public sector is concerned, the emphasis in the Eighth Plan and beyond would have to be on concentrating on the provision of infrastructural services in power, transport, irrigation and command area development and in the provision of social services and in programmes aimed directly at poverty amelioration which would emphasise asset creation and productivity as mentioned earlier, rather than simple finance for consumption through doles in whatever form. One other area where the public sector should continue to be actively involved is the public distribution system for essential commodities but whose area of activity would be severely limited to the really deserving on the basis of income norms. At present, the public distribution system is largely confined to the towns and barring a few states bypasses almost entirely the semi-urban and rural sectors where the bulk of our poor who should have a greater claim on the services of the public distribution system reside.

The areas suggested for the public sector will thus have to be as much as the public sector can handle efficiently given its own financial, administrative and managerial resources. There is no good economic argument for the public sector, in our present stage of development, whatever be the sound rationale for it at an earlier stage, to involve itself in activities like manufacturing industry and trade unless there are compelling economic or strategic reasons which need to be clearly spelt out. One of the problem areas for public sector management has resulted from its extension to a wide range of activities which it has neither been able to fund adequately or manage efficiently. While one may appreciate the theory of public sector acquiring control over the commanding heights of the economy, one fails to see what commanding heights have been scaled by making colour TV sets or running hotels in the public sector. The private sector in a regime marked by broad strategic guidance rather than detailed administrative controls should be given a greater degree of responsibility for investment and output. Policy should primarily seek to provide an institutional and infrastructural framework for the growth of industrial economy. It is a matter of legitimate concern that our policies should seek to promote small and medium scale industry in the technologically modern sector but this is better done through providing economic incentives rather than protective administrative devices like reservation of some areas of production for them. We need also to review industrial locational policies as in the case of incentives for locating in no industry districts which come in the way of rational economic investment decisions and which require subsidisation on a continuing basis. The widespread incidence of sickness in our small industry sector is standing evidence of the futility of ignoring economic criteria in making investment decisions. A poor and capital short country like ours can ill afford the waste of capital resources that closed industrial units represent as a result of faulty investment decisions.

The above discussion on limiting the role of the State to what only it can do and is legitimately expected to do and leaving decision making in the economy to myriads of economic agents in agriculture, industry, trade and services is, in a way, an additional dimension to the discussion with regard to decentralisation in the sense that decentralisation here refers to the economic decision making process. At the present time, in terms of the Plan, the major investment decisions are taken by the Government. Planning and regulation of economic activity in our country have meant that the State is concerned not only with macro-policy and public sector investment decisions but that over a large part of the organised sector, micro decision making is also subject to Governmental approval.

In the last few years, there has been a welcome move in the direction of deregulation of the economy or, to put it in a more positive way, in favour of liberalising the economic process and moving away from a rigid centralised planning system towards an indicative planning system. This process must continue and any move towards reverting once again in the direction of centralised planning firmly resisted. It is no longer appropriate at our present stage of development. It accords ill with the concept of decentralisation. In many parts of the world—even in countries where centralised planning held sway as in the Socialist countries—we are witnessing moves towards decentralisation, deregulation and are seeing the opening up of these economies to market forces and the price mechanism. This is what perestroika is about; it is what has impelled the move towards economic reform in Eastern Europe even before the recent political convulsions there. It is also the rationale for China's new economic policy. There is indeed an almost universal recognition of the limitations of the State as a catalyst of economic growth and development beyond a point and doubts about its ability to manage efficiently a centralised imperative planning system. Indian experience conforms to this trend.

The recent moves in this country towards liberalisation of industrial and trade policies have already made their wholesome influence felt in the economy. Buyers' market conditions are emerging in many sectors, a sharper competitive edge is being felt in industry and attention is now being paid to costs which could mark the beginning of the much needed correction to our high cost economy. The pervasive controls that we have had over the last several decades over investment, production and pricing have distorted allocative efficiency by masking the economic prices of factors of production. Controls have been responsible also for the growth of the parallel economy apart from encouraging the growth of rent seeking vested interests, not to speak of its role in encouraging political and administrative corruption. Deregulation hopefully should correct these distortions. It would be tempting to revile at these developments as being confined only to a handful of consumer durable industries and add a further criticism that these cater only to the well-to-do. The spirit of competitive efficiency which deregulation and liberalisation engender are not to be confined only to specific sectors. We have seen that even in areas other than durable consumer goods deregulation has had wholesome effects. Some years ago, cement was in exceedingly short supply. The impact of deregulating this industry has led to a sharp turn around and, today, we have a situation where cement far from being in short supply is faced with an excess of production over demand, leading in turn to cost consciousness amongst its producers in buyer's market condition. There are other examples which one could cite.

Policies of liberalisation, however, can be expected to contribute to competitive efficiency only in an environment of macro economic stability, the most important aspect of which is relative price stability. And here, we come to aspects of short and medium term adjustment. Price stability has been an important objective for us as much for social reasons—inflation is perhaps the most regressive tax and hurts the poor and vulnerable more than it does the rich—as it is for economic reasons in promoting allocative efficiency of resources. For such price stability to be achieved it is quite essential for monetary expansion to be more closely aligned to growth in the real economy. In the last few years we have witnessed a disconcerting gap between the growth rates of money supply broadly defined and real income with the former far outpacing the latter. When aggregate monetary demand thus is well ahead of real goods supply, it leads either to internal inflation and/or external imbalance. This is a fairly simple law of economics and, as I like to say, the Good Lord has not made any special dispensation for India to be exempt from fundamental economic laws. The monetary expansion in the last several years that we have been witnessing has its primary origin in the budget imbalance. Of the major elements which lead to growth in money supply, credit to the Government sector which is what deficit financing is has proved to be largest single item in our country for many years. The budgets of the Central Government and of many States have been in serious imbalance during the last several years. As far as the Central budget is concerned, in the last few years, we have been borrowing even to meet the deficits on revenue account. In other words, we are creating liabilities without corresponding creation of assets which can be expected to generate incomes to service the liabilities. Unless the fiscal situation is brought into greater balance and deficit financing, in the broadest sense of the term including Government recourse to the Reserve Bank of India and commercial banks, is considerably reduced, we will find it difficult to restore balance in the internal economy. Though the budgetary problem does not admit of easy solutions and there are constraints in limiting non-developmental expenditure, the restoration of a measure of fiscal discipline is not an impossible task if the Government were, on the one hand to limit its own investment activities to core sectors such as physical and social infrastructure and for schemes aimed at direct poverty alleviation and, on the other, seek to curtail non-productive expenditures. There can, of course, be no compromise whatsoever on national security and the essential requirements of defence must be met especially in the context of some worsening of the security environment around the country but even so it is necessary to scrutinise defence expenditures from the point of view of cost effectiveness. Our subsidy bill has also got out of hand. Often subsidies represent misplaced priorities, whether it be in respect of food subsidies or subsidising the use of irrigation, road transport and input supplies in agriculture. In our emphasis on reducing the cost of these services and supplies to the users, we miss the equally or perhaps even more important consideration that in all these cases it is adequate availability rather than cost that is of importance. By subsidising a few we are denying ourselves the ability to expand coverage of these services to the many. In that sense, subsidies have a regressive effect though, at first sight, the argument in their favour is that they are designed to protect the weak. It is thus not merely a question of fiscal orthodoxy but distributive considerations also that must be examined with respect to continuing the high level of subsidies that we have got into. Similarly, the interest bill in the Central budget is beginning to assume dangerous proportions. The continuing deficit means more borrowing and hence a larger interest bill which further strains the budget and tends to assume the shape of vicious cycle. To talk of an internal debt trap might be to dramatise the situation but its seriousness should not be lost sight of. The main thrust in our effort at a better budgetary balance should be on the side of expenditure bearing in mind also the measure of stickiness, if not inflexibility, in routine administrative expenditures.

Our record at domestic resource mobilisation is on the whole impressive; our tax to income ratios are not low either given the average level of incomes though one could argue for a higher proportionate share in the tax structure for direct taxes. Additional resource mobilisation has taken the form both of enhanced levels of tax resources and the instrumentality of administered prices in situations of fiscal monopolies. The capital market has also provided some resources in a non-inflationary way. One area of weakness on the resources side is represented by the less than satisfactory performance of public enterprises. These enterprises apart from those in the oil and trading sectors have in the main been a drain on the budget instead of contributing to it; an improvement in their financial results not so much through increase in administered prices but improvement in efficiency and curtailment of subsidisation would be an important element in improving Government finances.

It is only if our domestic economy is in greater balance and reasonable price stability maintained that we can hope to effect a visible improvement in our external account and move towards our goal of self-reliance. Exports in the past have suffered from a policy bias in favour of import substitution. While import substitution as a strategy cannot be faulted, the manner of its implementation tended to place emphasis on physical rather than economic import substitution. There are, of course, notable examples of successful economic import substitution — foodgrains for one where we owe it to our own efforts and petroleum though in the latter case there was the fortuitous circumstance of discovering oil. However, in general, import substitution has been pursued without adequate attention to domestic resource cost aspects and this was a factor in the emergence of our high cost economy which further militated against exports. The policy bias in favour of unmindful import substitution also had the consequence that the effective exchange rate for import substitutes was much lower than for exports At the margin, policy should be neutral in terms of expenditure of domestic resources and the effective exchange rate between exports and import substitutes. If indeed any preference were to be given, it should be given to exports if only because successful exports demand competitive efficiency in terms of price and quality in the harsh arena of the international market place.

One need not be a pessimist as regards our ability to achieve higher exports. Four decades ago, Indian exports accounted for 2 per cent of world exports; 25 years ago this share went down to 1 per cent. It is now less than 0.5 per cent—an absurdly low figure for an economy as large as ours despite its continental character. The control of domestic inflation and an industrial and trade policy which, permits economies of scale, allows import of technology and promotes cost efficiency and enhancement through adequate supply of both imported and domestic inputs would certainly augment exports. These are the steps we have begun taking in terms of policy liberalisation. It is also necessary to continue to maintain and, I would add, even perhaps improve the competitiveness of our exports through realistic exchange rate management. At the same time, we need to take a close look at our import bill especially as there is the likelihood of a rise in international crude oil prices and those of related products. It is wrong to assert as some have done that the recent moves towards import liberalisation have been at the root of our heavy import bill. The statistics do not support this popular assumption. On the contrary, the main items in our import bill represent bulk items which figure in the list because of inadequate domestic supplies. Apart from petroleum and its products which is a special case, our heavy imports of bulk items like fertilizer, steel and vegetable oils and in the most recent year, sugar, represent, if one were to be frank, the inefficiency of our domestic production abilities and less than capacity utilisation in these areas and in case of items like sugar, mismanagement of supplies. It is by curtailing these bulk imports through enhancing domestic production of items like steel, fertilizers, vegetable oils, and sugar apart from petroleum—where conservation measures continue to be necessary as the prospects for any large addition to the domestic output in the near term must be discounted—that we have to look to, to bring a measure of economy in our imports rather than go back on the policy of liberalisation which, if anything, has helped to improve the cost efficiency and price competitiveness of our exports.

The pressures our balance of payments has been subject to more recently have not emanated so much form the trade account—though the deficit here is still undoubtedly large it has been declining—as from the invisible sector. Inward remittances have reached a plateau while receipts from tourism continue to rise though slowly. The deterioration in invisible account stems largely from an increase in net interest payments reflecting the larger level of commercial borrowing and the decline in interest receipts consequent on a decline of our external reserves invested in interest yielding assets abroad. The rising interest bill will, if anything, further worsen the invisible account. In other words, the correction in our current account has to come primarily from the reduction in the trade deficit both through effective and economic import substitution and through continuing export expansion.

Meanwhile, we will have to live with a current account deficit which will need to be financed by an induction of foreign savings though at a declining proportion of our GDP. This is not to forswear our objective of self-reliance. Self-reliance is not to be equated with autarkic self-sufficiency but rather with our ability to pay our way in international accounts. This does not preclude obtaining resources from abroad provided we have the wherewithal to service debt on normal conventional terms.

In fact, external assistance, for the most part, has never been a significant element in our investment in the last several years. It has averaged around 10 per cent of our investment and between 2 and 2.5 per cent of our GDP, but its qualitative significance is far greater than is revealed by these numbers. The outlook for external assistance to India is none too bright, given the international aid outlook, the constraints on the resources of the multilateral agencies and the competing claims on them from other low income countries., viz., China, Sub-Saharan Africa and now possibly Eastern Europe. Given our debt service ratios which are now well above 25 per cent of our receipts from exports of goods and services there are limits also to the extent to which we can raise money in the commercial markets abroad or by taking recourse to NRI deposits in foreign currency and convertible rupees. These deposits incidentally represent perhaps the costliest and most volatile element of our commercial borrowing. Attention needs to be given to the possibility of internalising these obligations on a voluntary basis by the adaptation of the principle of debt-equity swaps tried by some countries. While we are not in an external debt trap situation, prudence calls for our limiting our recourse to external debt on commercial terms. Under the circumstances, we should expand our recourse to non-debt creating resources, the most important of which is foreign direct investment.

There are several good economic reasons why foreign direct investment is preferable to foreign borrowing to finance investment. For one, whereas borrowing for a project calls for the servicing the loan irrespective of whether the project has become productive and is profitable, servicing on foreign investment takes place only if the project concerned is both producing and is profitable and dividend remittances can only take place after domestic taxes are collected. Unfortunately, the objection to foreign investment has been political, psychological and ideological.

Countries with a strong nationalist tradition like China, Indonesia and Thailand, not to mention Mexico and Brazil, have been actively attracting foreign direct investment without any prejudice to their national sovereignty. We should recognise that direct foreign investment is today substituting international trade to some extent by placing production facilities overseas to serve both domestic and export markets. The image of the marauding multinational corporation is somewhat out of date. In the era of global business and in the present protectionist international trading environment foreign investment has proved to be an economic way of obtaining both technology and finance on the one hand and market access on the other. As a self-assured and mature country able to look after its own interests, it is time we shed our fears regarding domination by multi-national corporations, which I believe is a hark back to what I call the East India Company syndrome. There is no reason why India cannot attract more foreign investment for which the market is a seller's one. We have to compete with other countries to obtain this capital and we should indicate the advantages the foreign investor has in India—the size of the market, the pool of trained manpower and the presence of a dynamic entrepreneurial class. What is lacking today is the policy environment and simplicity of procedures. Foreign investment could be and should be made to be mutually beneficial and consistent with our objective of self-reliance.

This discussion has centered around the content of Plan in relation to the investment needed to obtain the basket of goods and services for basic human needs and poverty amelioration and the set of policies in respect of the role of the public sector, fiscal balance and external viability. If there is a broad consensus on these objectives and content, the building blocks of our planning exercise as we have known them for the last four decades would fall into place. These are the size of the Plan, the assumptions regarding capital output ratios and savings and investment, the share of public and private sectors and within the public sector, the respective roles of the Centre and States and for the private sector the role of the capital market and financial institutions in mobilising household savings and making part of them available to the agricultural, industrial and other sectors. Our plans in the past, I fear, emphasised the building blocks and got bogged down with their details in a mechanistic way to the detriment of the larger socio-economic objectives. Plan performance was often measured in terms of outlays rather than of output. I have attempted on the other hand to pose the issues in terms of the central objective of improving the physical quality of life of our people and ameliorating poverty and to fit the technical aspects along with their legal and institutional implications to this objective. In that sense, it represents a case of planning from below rather than, as we have had all these years, from top down.

In the final analysis, the task of India's development is an Indian responsibility. It is upto us to create a policy frame and investment pattern to subserve our objectives of growth, distributive justice and self-reliance. The 40-year old model of centralised planning with which we tried to reach these objectives has not measured upto either our expectations or our potential. The present is an opportune time to chart a different course, the beginnings of which are to be seen in the efforts to deregulate and liberalise our economy in the Eighties. An indicative planning model based on greater reliance on the price mechanism and competitive markets with the State only providing broad macro economic guidance and assuming responsibility for social services and infrastructure might be the answer to our continuing and necessary quest for growth, distributive justice and self-reliance. The challenges are there; so too are the opportunities. ☐

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Research Methodology Seminar

The Department of English, Ranchi College, Ranchi, in collaboration with Ranchi University, English Teachers Association and the British Council, Calcutta, organised an Inter-University Seminar on Academic Research Methodology. Shri S. Prabhakaran, Director-General, Administrative Training Institute was the chief guest at the inaugural function which was presided over by Dr. Ram Dayal Munda, former Vice-Chancellor of Ranchi University. Shri U.K. Choubey, Director (Personnel & Administration), delivered the inaugural address. Dr. L S. Singh, Vice-Chancellor, Ranchi University, also addressed the seminar which was attended by over 25 teachers from the universities in Bihar. Prof. P.P. Dayal, Head of the Department of English, Ranchi College, Ranchi, was the convener of the seminar.

Dr. Michael Wheeler of the Lancaster University was a special invitee who coordinated the proceedings of the seminar and acted as an expert.

Speakers at the inaugural session acknowledged that research standards needed to be developed and maintained, and that all research activities must ultimately help mankind. Concern was expressed over the deterioration that had set in, the difficulties the researchers faced and the need for an orientation of the research supervisors. Financial and administrative constraints were noted. It was hoped that the seminar would be able to define the problems and suggest some viable measures to stem the rot and improve the situation.

The papers presented and discussed at the seminar included (i) Academic Research in India; (ii) Preparation of a Research Paper; (iii) On selecting a topic for Research; (iv) Preparation of Bibliographies: Problems in Indian Context; (v) The Viva Voce Examination; (vi) Looping the loop of Research; The Initial Stage; and (vii) Fundamentals of Taking Notes.

Based on the discussions and presentations by the participants, the visiting expert, Dr. Michael Wheeler, arranged and delivered the following lectures at the Seminar: (1) M.A., M.Phil., Ph.D : Aims and Assessment; (2) Choice of Field and Topic : Varieties of Research; (3) English Literature as a Second Literature; (4) Recent Development in Literary Theory and Methodology; (5) Research Techniques and the preparation of the Thesis; (6) Changing the Questions; (7) Victorian Literature; (8) An Integrated Higher Degree Scheme in Bihar; and (9) Co-ordinated Research Programmes.

Dr. Wheeler used slide projections and video film shows to illustrate some of his lectures.

Dr. Wheeler first outlined the processes and safeguards that were followed in Britain in the matter of preservation of standards of research. The difference between guided dissertations and independent research was brought out. Academic research does not necessarily lead to discovery but aim at interpretation, presentation and critical evaluation. On this basis different methods could be fruitfully employed in academic research. Study of a period, a genre, a group of writers, an idea, a movement, could all be taken up with equal promise of the joy of research. Methodology could be made to adjust the approach. Variety of approach could be multiplied by the kind of methodology used.

Regarding choice of topic and field of research, Dr. Wheeler once again related the same to multiplicity of preferences, approaches and methodologies. Even editing of texts and their presentation could constitute a major breakthrough in academic studies. One's personal likes and dislikes counted the least. Research activities are best carried on in an objective and intellectual manner. The supervisor may be able to help considerably in checking up the project and the proposed bibliography. The choice of field is wide.

On the uses of English literature as a second literature, particularly in the Indian context, Dr. Wheeler pointed out that this opened up a vast new field of comparative studies. An Indian and an English poet could be studied together. This could be found immensely useful in the field of research in India. It has not only a lot to imbibe but also a lot to give to the world.

Dr. Wheeler also delivered a lecture on recent development in literary theory in England. Developments in methodology of researches was brought out. Literary studies are no longer confined to the conventional areas. Deconstructionism and other isms and cults were opening up vast new fields of vision and interpretation.

A lot could be said about techniques of academic research as well as preparation and presentation of the thesis. Novel methods could be used to ensure quality and meaning of interpretations. Taking of notes and using the same in the body of a thesis, use of secondary material, references and preparation of bibliographies could add greater value to the final output. It depended on the individual research scholar but his supervisor could also help.

Dr. Wheeler's discussions about the questions with which one embarks on a research project and the need to modify or even reframe them as one moves along, were particularly appreciated by all participant-supervisors. It was a factor they understood and appreciated. It also reassured the research scholars participating in the Seminar. If this freedom, this elasticity was not allowed, the very aims of research could be defeated. Herein lay the qualitative difference between a guided M.A. level dissertation and independent Ph.D. research.

As the questions undergo changes, interpretation too could change and new interpretations could bring the joys of research to the scholar.

Dr. Wheeler also offered suggestions for co-ordinating the Higher Degree Scheme in Bihar. A series of safeguards could be built into the system itself in order to preserve and develop the quality of study and research.

Departmental councils or specifically constituted committees could be entrusted with the task of looking after and also co-ordinating research activities everywhere in the world.

Dr. Wheeler also delivered a lecture on Victorian Literature and its revaluation. He pointed out with courage the values and ideals Victorial literature stood for.

The following suggestions were made at the seminar :

(1) Rigorous admission procedure for admission to the Ph.D. must be followed. Interviews, awareness of existing achievements and procedures must ensure the research programmes and their proper co-ordination.

(2) Existing regulations were found wanting in so far as these could not be effectively used in monitoring and marking the progress of the research scholars and their writing at all stages.

(3) Library services should be radically improved. Inter-library lending facilities should be introduced and strengthened.

(4) The supervisor may be present at the viva but may not vote on the decision.

(5) A system of post-Doctoral study leave should be evolved by the universities.

(6) Efforts should be made to generate funds internally by the university as well as by Associations of English Teachers.

(7) The universities and the UGC should be requested to allocate large funds for researches in English.

(8) M.Phil. courses are supposed to be part of the desired research training for scholars. Therefore M.Phil. courses should be introduced in the universities.

Science Extension in University Curriculum

The Faculty of Rural Oriented Sciences and the Examination Reform Unit of the Gandigram Rural Institute (GRI) (Deemed University), organised a two-day Regional Workshop on "Evolving replicable models of Science extension in University currculum for rural applications" on March 23-24, 1990 at Gandhigram. Mr. D.K. Oza, Vice-Chancellor, Gandhigram Rural Institute inaugurated the workshop. The objectives of the workshop were (a) to identify all the possible extension activities relating to various science courses at the undergraduate and postgraduate levels and the methodologies for their implementation; and (b) to develop tools for evaluation of the students' skills/performance with extension activities.

Participants in the workshop comprised a variegated group ranging from scientists and researchers from reputed institutions in Tamilnadu down to panchayat union chairman and school teachers from villages in the vicinity including post-graduate and predoctoral students of GRI. Theme papers related to science extension in University curriculum, Extension through village science clubs, Home science extension in university curriculum, science for Rural Development, and Evaluation of extension activities were presented and discusssed.

The Workshop identified several areas where science could play a major role in its applied aspects to develop the rural community. These include (1) Problems of potable water (In areas where there is no possibility of industrial pollution); (2) Soil analysis of agricultural lands ; (3) Identification of adulteration of food materials through chemical analysis; (4) Economic use of renewable sources through demonstration of smokeless chulas and propagation of the same; (5) Demonstration of Solar Cooker, Solar Heater and Solar Drier and propagation of the same; (6) Transfer of improved techniques of mushroom cultivation; (7) Transfer of technology of composite pisciculture, epiculture ann sericulture; (8) Transfer of technology of potculture of spirulina; (9) Extension education on occupational hazards in handling of fertilizers and pesticides; and (10) Extension education for proper maintenance of bio-gas plants and propagation of use of bio-gas.

The workshop also developed a model extension record for the undergraduate and postgraduate students separately.

Winter School on Futurology

A five-day Winter School on Futurology (WSF) sponsored by the Department of Science and Technology (DST), Govt. of India New Delhi, was held at Gauhati University from 19 to 23 March, 1990. The objectives of the programme were (i) To develop an awareness among academicians and policy makers about the futures studies, forecasting, technology assessment, perspective planning & management; and (ii) To familiarise the participants with various methods and approaches of futures studies.

The course content included (a) Futurology concepts, techniques, research methods and applications; (b) Simulation technique and its application in futures studies; (c) Technology and social forecasting, technology assessment methodologies; (d) Perspective planning in education, health, food and shelter; and (e) Human resource development.

The Course was primarily intended for university/college teachers of all faculties, scientists and technology personnel working in R & D sector of various governmental and private agencies, over 45 participants from the states of Assam, Meghalaya, Nagaland, Arunachal Pradesh, Tamilnadu and Rajasthan attended the School.

Dr. S.C. Seth, Head, Technology Forecasting and Futures Studies Unit, Deptt of Science & Technology, Govt. of India, acted as the Course Adviser. He lucidly explained the three important domains of Futurology i.e. Technology Forecasting (TF), Social Forecasting (SF), and Technology Assessment (TA).

The Gauhati University provivides regular courses in Futurology at undergraduate and Postgraduate levels. The University intends setting up a Centre for Futures Studies at M.Phil level as also introduce a Unit on Futurology in the Foundation Course Syllabus in the 3 year degree course.

Orientation Programme for College/University Teachers

The Academic Staff College of Himachal Pradesh University recently organised an Orientation Programme for the professional development of college / university lecturers. Inaugurating the programme Prof. K.C. Malhotra, Vice-Chancellor of the University said that our society needed teachers who were capable of producing able citizens who in turn would accelerate the developmental process. Prof. Malhotra stressed that the teachers should develop their personality as per the social values and condition their physical and mental processes accordingly.

During the course of the programme emphasis was laid upon socially relevant themes. Unique feature of the programme was the organisation of a specially designed 'Human Process Laboratory' under the Director ship of Prof. D.B Desai of M.S. University of Baroda. Formal lecturing was done with audio-visual aids, informal interactions, group discussions, quiz, debate, brain-storming, fish-bowling, sensitisation, buzz sessions etc. Monitoring and evaluation of the participants' was done through a pre-orientation and post-orientation test.

Prof. R.K. Malhotra, Dean of Students Welfare, H.P. University, who delivered the valedictory address, said that a teacher should be a critical judge who could discriminate right from wrong and he should be able to stimulate students to learn. Stressing the need for orientation, he said that a teacher should be continuously learning and should not become academically paralytic.

Exploring the Feminine Psyche

The Department of English, University of Jodhpur, organised a three-day seminar on Women Creative Writers in Indian English Literature. The seminar was inaugurated by Dr. Mulk Raj Anand, one of the leading figures in Indian English fiction.

The Director of the Seminar, Professor Kamini Dinesh explained the relevance of focussing on feminine sensibility and world view in the context of the growing self awareness among women in India.

In his inaugural address, Dr. Anand noted that the fictional representation of women shows sensibility and deep empathy but it is in the mother-tongue that fictionists have reached the lowest dregs of society. Women writers in English have, therefore, to extend their obit of awareness. This aspect found further explication in Prof. Meenakshi Mukherjee's keynote address wherein she drew attention to the fact that English as a choice for creative expression was restricted to a cultural class. She also spelt out the area of the Seminar in terms of the operative components of the theme : women writers, Indian and English. She emphasized that for a literary appraisal these terms be clearly defined. Rather than myths and idealized conceptions the specific connotations and historicity of "woman" and "Indianness" be kept in mind. While Western feminist criticism had given a new vocabulary and approach, there were also theoretical models and canons of English Literature, she opined.

Professor R.S. Singh, Head of the Department of English, Kurukshetra University delivered the valedictory address. While women writers have shown a finer perception of feminine sensibility, he felt no new structure had been evolved to express it. In his presidential remarks Prof. G.S. Balarama Gupta (Editor JIWE) sensed the emergence of a new feminine aesthetics. He suggested that Research and Study Centres be set up for students and scholars of Indian English Literature and additional journals be also brought out to support Indian English writing.

The consciousness of the need for change and the movement towards change as reflected in fictional characters and the imaginative recreation of experience was explored in the twenty-eight well researched papers presented at the seminar which was attended by over fifty delegates.

Diploma in Education Management

The SNDT Women's University offers a one-year Postgraduate Diploma in Education Management for administrators in educational institutions through its Department of Education Management. The course is designed to provide an opportunity for those who hold responsible positions within the education system, to equip themselves with scientific management skills and techniques as related to education, and thus enhance their personal and professional effectiveness.

In the training programme, stress is laid on conceptual understanding and its application to work situations. Participants are placed in situations which enable them to utilise their experience and develop increased understanding of skills such as effective inter-personal communication, leadership and team building, strategic planning and decision making.

The course is structured in order to make it convenient and practical, and comprises three phases of contact sessions which are interspersed with three self instructional phases.

Further details can be had from the Head, Department of Education Management, SNDT Women's University, Bombay-400020.

Commonwealth Studies Conference

The Second International Conference of the Indian Society for Commonwealth Studies was held at Sri Krishnadevaraya University, Anantapur recently. The theme of the conference was "Tradition and Modernity in Commonwealth Writing". The Conference was inaugurated by Prof. David Kerr of Monash University, Australia. Mr. John Zubrauski, First Secretary, Australian High Commission, presided over the function, while Prof. M.V. Rama Sarma, former Vice-Chancellor of S.V. University, delivered the keynote address.

The theme of the conference was highlighted through public lectures delivered by Prof. David Kerr and Rosemary Kerr from Australia, Prof. M.V. Rama Sarma, Prof. M. Sivarama, Krishna, Osmania University, Dr. S. Ramaswamy, Bangalore University and Mary David, Mother Teresa University, Kodaikanal.

About 30 papers dealing with different aspects of Commonwealth Writing were presented and discussed The deliberations went a long in promoting the cause of Commonwealth literature in Indian universities.

Training Rural Youth

The Department of Extension Education of the Gandhigram Rural Institute (GRI) (Deemed University), in collaboration with the Central Board for Workers Education (Madurai Region), organised a two-day Awareness Generation Programme for the members of village youth clubs on March 26-27, 1990 at Gandhigram. Inaugurating the training programme, Dr. R. Subramanian, Professor and Head, Dept. of Applied Research, GRI urged the rural workers to be knowledgeable and united so as to mount a collective strength against teething rural problems.

Participants from both sexes,

numbering 40, drawn from 10 youth clubs in the vicinity of Gandhigram, were oriented by the faculty members as well as experts from Gandhigram and the Government on variegated topics of relevance to rural people in their day-to-day life.

Generation of a multitude of alternatives for effectively tackling rural problems, particularly confronting the youth clubs and identification of problem areas for follow-up efforts by Gandhigram was a significant outcome of the programme. Mr. K. Chellappan, Dean, Faculty of Rural Development, was the coordinator of the programme.

Consumers' Day at Alagappa University

The Department of Bank Management, Alagappa University recently celebrated Consumers' Day. Dr. S. Annamalai, in his introductory remarks highlighted the difficulties experienced by Indian consumers and emphasized the need for consumer awareness. He stressed the role of students' community in the creation of consumer awareness. The speakers depicted the ways in which the consumers were cheated in India and suggested the means through which consumers could protect themselves. Formation of consumer councils, consumer education and redressal through courts were some of the remedial measures suggested.

Course in Social Welfare Admn

The Tata Institute of Social Sciences (TISS) proposes to offer a Postgraduate Certificate Course in Social Wefare Administration from June, 1990. This is a one semester full-time professional programme of training, for those who have work experience (but, no social work degree) in the field of Social Welfare, Social Services, Social Security and Development Programmes. The course content would make an effort to respond to the specific needs of the participants and their organisations.

Holders of a Bachelor's Degree from any faculty of a recognised university including Law, Education and Medicine are eligible for admission to this course. In addition, the candidate should have a minimum of three years' administrative experience in the field of Development Administration, Administration of Social Welfare, Social Services or Social Security Programmes.

There will be three compulsory foundation/core lecture courses. In addition, each trainee will be required to take three optional courses.

Further details may be had from Mr. Swapan Garain, Department of Social Welfare Administration, Tata Institute of Social Sciences, Post Box No. 8313, Sion-Trombay Road, Deonar, Bombay 400088. The last date for receipt of applications is 22 May, 1990.

LU Orientation Programmes 1990-91

Professor Amrik Singh, the well-known educationist and author inaugurated the 1990-91 series of Orientation Programmes at Lucknow University Academic Staff College on March 27, 1990. In his inimitable style, Professor Singh spoke on what it takes to be a teacher in a College or University. Basing his observations on his own experience he said that the teacher is called upon to shoulder responsibilities that are larger than his classroom and involve an instinct for the right moral choice and resources of absolute integrity. He said that a teacher's role defines itself in the relationships that are forged between him and his students and the challenge for the teacher lies in gradually evolving himself as a role-model for the students that go to them. Professor Amrik Singh's address was received with respect and solemnity by the audience that included senior academics from the Lucknow University.

News from UGC

INSAT-1B Programme of UGC

Between 1st May to 7th May, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

1.5.90

"Hydrogen Atom"
"Understanding the Media : An Introduction"
"Bio-Environmental Control of Malaria"

2.5.90

"Corrosion—II"

"Nature is Culture"

"Somaclonal Variation"

3.5.90

"Introduction to Computers"

"Unravelling the Past : Chemistry Helps in Archaeology"

"Teaching and Learning English"

4.5.90

"A Date With Maths—I"

"Secrets of Stone Water"

"What on earth are we doing to our forests ?"

5.5.90

"Made in Chicago"

"Ritual Art Sanjhi"

6.5.90

No Telecast

7.5.90

"Classical Mechanics—XII : Rigid Bodies—Kinematics"

"Environmental Pollution—Economists' View"

"Raw Materials : Sugar"

2nd Transmission

12.00 Noon to 1.00 p.m.

1.5.90

"Home Made Cosmetics—II"

"Values in Education—I : The Ideals"

"Hour USA : The New Frontier—Voice Activated Machine; Chinese Medicine"

2.5.90

"Images of Women in History—I"

"Appropriate Technology—Tree as Antenna"

"Plants in Our Neighbourhood—VIII"

3.5.90

"One World One Language—I : Amateur"

"Tribal Art & Architecture of Manipur"

"Appreciation of Literary Forms—I"

4.5.90

"Models"

"Defence Mechanism—VI"

"Harnessing the Monsoon"

5.5.90

"A Manipur University Profile"

"Never Say Die"

"European Model Music"

6.5.90

No Telecast

7.5.90

"Little Knowledge is a Dangerous Thing"

"Management Functions & Behaviour—Leadership"

"Improved Seeds, Better Harvests"

Central Assistance for Mother Teresa University

The University Grants Commission (UGC) has declared the Mother Teresa Women's University, Kodaikanal, Tamil Nadu, as an institution fit to receive Central assistance in terms of the rules framed under Section 12(B) of the UGC Act, 1956. The University was accordingly given Seventh Plan development grants before March, 1990. The Commission has desired that the University should also introduce teaching programmes at the postgraduate level.

The Mother Teresa Women's University came into existence in the year 1984 to devote exclusively to research in women's studies and provide consultancy and monitoring services for welfare schemes relating to women. The University imparts its academic programmes through eight disciplines including Economics, Education, English, Family Life Management, Historical Studies, Psychology, Sociology, and Tamil Women's Studies to generate a more comprehensive, critical, balanced and intellectual understanding of Women's perception of their own lives, struggle and inspirations and structures of inequality.

The academic programme is basically inter-disciplinary in nature and focuses on the problems of social exploitation of and gender prejudices against women. Strong emphasis is placed on research in all disciplines in women's studies to provide a research base for people interested in women's issues and working in the fields of community work, social welfare, women's services, law, and health care. Media research activities are also carried out in the university's Research-cum-Extension Centres at Madras, Madurai and Nagercoil.

COMMUNICATION TECHNOLOGY AND CLASSROOM ETHOS

SHIKSHANIK TECHNOLOGY PARIBHASHA KOSH
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Dr. Ummed Singh
Department of Education
South Gujarat University, Surat-395007

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Pages 88+8 Year 1989 Rs. 45/-

Challenges of XXIst Century

G.B.K. Hooja*

Srivastava, Anand P. 'Teaching and Learning in XXI Century. New Delhi, Hindustan Publishing Corporation, 1987. 198p. Rs. 150/-.

A.P. Srivastava deserves all the kudos for having dared to adventure into a new field of educational activity through this book. He has attempted to look into the future of education, and has tried to outline the requirements of the teaching system in the next century.

As he says, no one in the country is happy with the state of education in India. Despite various commissions and declarations of national policy, educational standards are deteriorating generation after generation. One would agree with him that we have waxed eloquent only on 'What' and 'Why' aspects of educational deficiencies, but we have not worked out a 'How' manual for use by our teachers. The book under review attempts to provide the knowhow for improving the teaching and learning process in the classroom and outside. It peeps into the challenges of the XXIst Century and discusses linkages between teaching and learning, advancing frontiers of learning and the tasks ahead role of teaching departments as academic centres, role of library in education, and accountability in the realm of education. The book also contains useful appendices including the Programme of Action, National Policy on Education (1986) relating to Higher Education, Secondary Education and Navodaya Vidyalayas. Appendix III is devoted to the Report of the Mehrotra Committee (1986) on revision of pay scales of teachers in Universities and Colleges.

In 1823, Raja Ram Mohan Roy pleaded for the promotion of a liberal and enlightened system of instruction, embracing Mathematics, Natural Philosophy, Chemistry and Anatomy with other useful sciences. His aim was to fill in a long needed deficiency in the educational system as provided by the oriental *madarasas* and *pathshalas*. This coincided with the requirement of the British rulers who needed a bank of English Knowing persons to act as interpreters between the British Masters and native subjects. The emphasis, therefore, was on the knowledge of English Grammar and literature. The upshot was establishment of a system of education which made available a study of modern sciences to the elite, but divorced it from value-oriented, ethical culture obtainable in the classical Persian and Sanskrit texts.

Srivastava is right when he says that the way we conduct our classes makes our students highly dependent on the teacher for information. The students are not encouraged to think independently. "We as teachers have not cared to cultivate problem solving and decision making skills in college students", says the learned Professor.

What is needed is an elastic and dynamic system of education which can provide the needed conditions to encourage initiative, experimentation and creativity among teachers and students and thereby lay the foundations of educational progress. If University teaching is to be vitalised, changes are needed on the following lines, in the opinion of the author :

— More flexibility in the courses offered and more freedom of choice by the students;

— a marked reduction in the amount of formal instruction and a corresponding increase in tutorial work, discussion groups, seminars and in independent study; and

— a change in the character of teaching to discourage cramming and to stimulate curiosity, problem solving ability and originality.

Srivastava, therefore, recommends that the number of formal classroom hours should be reduced. The time thus saved should be devoted to self study under the guidance of knowledgeable instructors. Every effort should be made to challenge and stretch the minds of the students by assigning them writing assignments, asking them to solve difficult problems and providing opportunity for independent study of subjects in which they are interested. The students should be encouraged to do much more general writing than

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**Former Vice-Chancellor,*
Gurukul Kangari Vishva Vidyalaya,
A-15-A, Vijay Path, Jaipur-302004.

they do at present, both during the academic year and in vacation periods. This highlights the importance of building up good libraries/laboratories both in the universities and colleges.

The author is again right when he says that we should so organise the learning and teaching process as to eliminate the element of fear amongst the students, and should encourage them to think boldly, dangerously and even foolishly but independently. "A teacher must know that his brilliant presentation in classroom is only a part of the total process of learning and education." We have to generate intellectual activities so that students are able to reach personalised meanings of units of knowledge where they develop their own human social context. Motivation, meaning and social setting must find place in an educand's learning process, and a XXI century teacher has to provide for them.

The present system of teaching develops a tendency to out bid the other fellow and lays emphasis on competition, ignoring the cooperative needs of the society. The answer lies in the adoption of the tutorial system. Tutorials are collaborative learning sessions under the guidance of a knowledgeable tutor. Collaborative learning prepares a person better for life long self-learning and cooperative endeavour. Tutors are required to promote a tutee's mental process through conceptualisation and problem solving by analysis and synthesis. Thus, in tutorials, a learning cycle is formed wherein the tutee is made to explore, invent and discover, and this is the much-needed reform which shall equip and students to face the XXIst century with confidence.

Needless to say that the book under review should not only adorn the shelves of the libraries of the schools and colleges of India but should be read and pondered over by millions of teachers in the educational system across the length and breadth of the country. □

An Ideal University System

(*Continued from page 3*)

system all the above types of subsystems should be more autonomous than the main system itself. The reason is very simple; these systems work under the cover and protection of the main system. These are the nerve centres of the university and the system is recognised by the collective recognition of these subsystems. Infact, they should work like incubators having their own 'atmospheres' and 'cultures'.

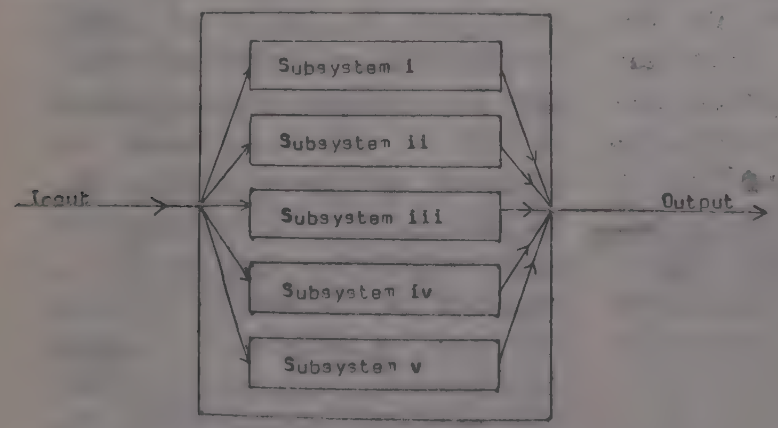

Figure 3

Autonomy and Pseudoautonomy

The autonomous subsystems are 'basic subsystem' and not systems in themselves. These have to be 'intersecting subsystems' derived from the above. These intersecting subsystems are mostly invisible in day to day working. The subsystems are supporting hands of the Vice-Chancellor. They also serve as academic nourishment channels of a university.

Decentralization and Supporting Infrastructure

The underlying administrative and supporting technical staff is the nervous system of a university. But these are only 'nerves' not the 'brains' of the university.

In a 'weak' or a 'sick' system the domination of supporting and service sector takes over. Then system looses its basic mission converting it into a machine churning out degrees and certificates with no social relevance and no academic values. □

AIU Library

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RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Bhattacharya, Arpita. *Economics of information transfer : Cost-benefit analysis of serial acquisition in academic libraries in India.* BHU. Dr. Y.P. Dubey, Reader, Department of Library and Information Science, Banaras Hindu University, Varanasi.

2. Jasbeer Singh. *Effectiveness of library collections of central universities of India : An evaluative study.* BHU. Dr. P. Nath, Lecturer, Department of Library and Information Science, Banaras Hindu University, Varanasi.

3. Rajendra Prasad. *Validity of bibliometric laws in the field of social sciences.* BHU. Dr. P. Nath, Lecturer, Department of Library and Information Science, Banaras Hindu University, Varanasi.

4. Srivastav, Ajay Kumar. *Resistance to technological innovations in libraries : A behavioral study with particular reference to India* BHU. Dr. Y P. Dubey, Department of Library and Information Science, Banaras Hindu University, Varanasi.

Psychology

1. Jain, Sindhu Rani. *A socio-psychological study of images of successful and unsuccessful political leaders in India after ninth general elections.* HS Gour. Dr. (Smt.) Vijya Shrivastava, Lecturer, Department of Psychology, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Sociology

1. Anijakumari, V.L. *Life and culture of the Harijans in Travancore.* Kerala. Dr. P.K. Peethambaran, Prof., S.N. College, Chempazhanthi.

2. Aravindakshan, T. *Regional culture in a metropolis : The Malayalees in Delhi.* Kerala. Dr. P.K.B. Nayar, Former Prof. and Head, Department of Sociology, University of Kerala, Kariavattom.

3. Bharat Singh. *Nagar Mahapalika mein karyarat purush safai karmiyon ka samaj vaigyanik vishlesan.* BHU. Dr. Vishnu Gopal, Department of Sociology, Banaras Hindu University, Varanasi.

4. Kala, R. *Personality value pattern and social adjustment of women social worker : A study of anganwadi teachers in Kerala* Kerala. Dr. K B. Thankamony, Head, Department of Sociology, S.N. College, Chempazhanthy.

5. Ozoemenam, Theresa N. *Milk co-operatives and rural woman : A sociological case study in Maharashtra.* Shivaji. Dr. M.M. Awate, Department of Sociology, Shivaji University, Kolhapur.

6. Singh, Anugrah Narayan *Bokaro Steel Factory mein shramikon ka udbhav evam vikas.* BHU. Dr. J.N. Singh, Department of Sociology, Banaras Hindu University, Varanasi.

7. Singh, Usha. *Anganbari karyakartaon ka ek samaj vaigyanik adhyayan : Mirzapur Janpad per adharit.* BHU. Dr. Mohd. Salim, Department of Sociology, Banaras Hindu University, Varanasi.

8. Srivastava, Archana. *Studies of the girl child.* BHU. Dr. (Mrs.) S. Jetley, Department of Sociology, Banaras Hindu University, Varanasi.

Political Science

1. Aravindakshan, D. *Politics of financial autonomy in centre-state relations of India : A case study of Kerala since 1967.* Kerala. Dr. M. Sreenivasan, Principal. (Retd.), Marthanda Mandiram, Pattathanam, Quilon.

2. Chaturvedi, Savita. *Rajnitik chetna aur Hindi sahitya: Munshi Premchand ke rajnaitik drishtikon ka adhyayan.* HS Gour. Dr. R.C. Dubey. Reader, Department of Political Science, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

3. Dubey, Rama, *Bhartiya nyaya vyavastha mein lok adalaton kee prasangikta evam karyakaran : Madhya Pradesh ke sandarbh mein ek adhyayan.* HS Gour. Dr. (Smt.) Shanti Shrivastava, Lecturer, Department of Political Science and Public Administration, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

4. Rai, Gayatri. *"Dkshes" aur mahashaktiyan : Ek vishleshan.* HS Gour. Prof. R.C. Dubey, Reader, Department of Political Science and Public Administration, Dr. Harisingh Gour, Vishwavidyalaya, Sagar.

Economics

1. Patil. S.B. *Anatomy and physiology of sick units : A study of small scale units in Kolhapur.* Shivaji. Dr. V.B. Jugale, Head, Department of Economics, A.S.C. College, Sangli.

2. Rai, Archana. *Damoh, Panna evam Sagar Jilon mein kshetriya grameen bank kee bhumika evam karya.* HS Gour. Dr. Sudha Sisodhiya, Govt. Girls College, Damoh.

3. Salunkhe, S.M. *A study of the changing fiscal structure of Solapur and Kolhapur Municipal Corporations.* Shivaji. Dr. J.F. Patil, Department of Economics, Shivaji University, Kolhapur.

4. Sen, Badal Kumar. *Plywood industry of Assam : A study of its problems and prospects.* Dibrugarh. Dr. H. Goswami, Prof. and Head, Department of Economics, Dibrugarh University, Dibrugarh.

5. Tambankar, P.J. *An economic study of labour cooperative societies in Sangli District.* Shivaji. Dr. J.F. Patil, Department of Economics, Shivaji University, Kolhapur.

Law

1. Yadav, Shyam Jeet. *Frustration of contracts : A comparative study of the English and Indian Law.* BHU. Prof. V.N. Singh, Department of Law, Banaras Hindu University, Varanasi.

Public Administration

1. Ahirwar, Bhagwan Das. *Madhya Pradesh ke adivasi vikas evam prashasan ke sandarbh mein Jagdalpur Tahseel ke adivasi vikas karyakramon ka vishleshan.* HS Gour. Dr. (Smt.) Shobha Shankar, Lecturer, Department of Political Science and Public Administration, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

2. Gupta, Kalpna. *Bhartiya Rashtrapati kee apatkaleen shaktiyan : June 1975 ke vishesh sandarbh main ek adhyayan.* HS Gour. Dr. R P. Goutam, Lecturer, Department of Political Science and Public Administration, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

3. Jain, Ashok Kumar. *Madhya Pradesh ke vikas mein pradhikarnon kee bhumika : Bundelkhand Pradhikaran ke vishesh sandarbh mein.* HS Gour. Dr. (Smt) Shanti Shrivastav, Lecturer, Department of Political Science and Public Administration, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Education

1. Mittal, Sadhna. *A comparative study af self concept and personality factors of scheduled caste and non-scheduled caste student.* Agra. Dr. (Mrs.) Shruti Kumar, Department of Education, R.B.S. College, Agra.

Commerce

1. Merh, Goutam. *An appraisal of the working of merchant banking in India.* BHU. Dr. K K, Mishra, Department of Commerce, Banaras Hindu University, Varanasi.

2. Mishra, Ajay Kumar. *Problems and prospects of carpet industries in Eastern U.P.* BHU. Dr. D.S. Mishra, Department of Commerce, Banaras Hindu University, Varanasi.

3. Pandey, Kashi Nath. *Personnel management practices and industrial relations in Indian Govt. banks : A case study.* BHU. Dr. A.A. Ansari, Department of Commerce, Banaras Hindu University, Varanasi.

4. Patil, S.B. *A study of the problems and prospects of cinema theatres in Maharashtra.* Shivaji. Dr. R.D. Biradar, Chh. Shahu Central Institute of Business Education and Research, Kolhapur.

5. Rai, Anand Deo. *Bharat mein camponion ka samapan.* BHU. Dr. V.S. Singh, Department of Commerce, Banaras Hindu University, Varanasi.

6. Rai, Sada Nand. *Bhartiya krishi vipanan kee samasyayen : Ek adhyayan.* BHU. Dr. S.B, Rai, Department of Commerce, Banaras Hindu University, Varanasi.

7. Sahu, Pravat Kumar. *Financial management in joint sector industries of Orissa.* BHU. Dr. S.P. Srivastava, Department of Commerce, Banaras Hindu University, Varanasi.

8, Sastry, V.V.L.N. *Development of backward areas : Role of state level financial and development corporations.* BHU Dr. S.P. Srivastava, Department of Commerce, Banaras Hindu University, Varanasi.

9. Singh, Fate Bahadur. *Appraisal of the working of department industries with special reference to Varanasi Centre.* BHU Dr. M. Ahmad, Department of Commerce, Banaras Hindu University, Varanasi.

10. Singh, Gyan Prakash. *Bharat mein vikas bankon kee vittiya sthiti evam karya parinam.* BHU. Dr. M.N.A. Ansari, Department of Commerce, Banaras Hindu University, Varanasi.

Home Science

1. Bhasharani, Channupati. *Biochemical assessment at nutritional status of children.* BHU. Dr. (Smt) Archana Chakravorty, Department of Home Science, Banaras Hindu University, Varanasi.

2. Singh, Kiran. *Nutritional status of children in U.P.* BHU. Dr. (Smt) Archana Chakravorty, Department of Home Science, Banaras Hindu University, Varanasi.

HUMANITIES

Philosophy

1. Barman, S. Kumar. *Vrihadranykapnishad : Same eksatmak adhyayanam.* BHU. Shri Krishan Kant Sharma.

2. Choubey, Om Prakash. *Spinoja ka darshan tatha Gita mein Rahasyavad : Ek tulnatmak adhyayan.* BHU. Dr. M. Agrawal, Department of Philosophy, Banaras Hindu University, Varanasi.

3. Jha, Cyan Shankar. *Bharatiya darshaneshu atmaswarupavimarshah.* BHU. Dr. G. Anjaneya Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

4. Joshi, Anant. *Shri Devi Bhagvatsye darshnikamdhyaynam.* BHU. Dr. G. Anjney Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

5. Lallu Prasad. *Buddha aur Kant kee niti mimansa : Ek tulnatmak adhyayan.* BHU. Dr. K. Mishra, Department of Philosophy, Banaras Hindu University, Varanasi.

6. Mehrotra, Archna. *The problem of moral freedom in Indian thought.* BHU. Dr. C.P.M. Nemboodhary, Department of Philosophy, Banaras Hindu University, Varanasi.

7. Mishra, Prasun Kumar. *Mahayana Buddha darshan.* BHU. Prof. B.N. Singh, Department of Philosophy, Banaras Hindu University, Varanasi.

8. Nilam Kumari. *Mahabharat mein dharma kee avadharana.* BHU. Dr. Vijay Kumar, Department of Philosophy, Banaras Hindu University, Varanasi.

9. Pandey, Nirmala, *Manusmriti ka samaj darshanik adhyayan.* BHU. Prof. R.R. Pandey, Department of Philosophy, Banaras Hindu University, Varanasi.

10. Pandey, Santosh Kumar. *Upanishatsu Sankhyayog vimarsh.* BHU. Shri Krishan Kant Sharma.

11. Prasad, Prabhakar. *Anandbodh krit Shad Ninay Deepikaya : Sampadnam.* BHU. Dr. Sudhansu Shekhar Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

12. Sharma, Krishan. *Darshaneshu manstatva vimarsh.* BHU. Dr. G. Anjney Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

13. Shastri, Prameshwar Das. *Vedant darshan mein Kabir kee drishti.* BHU. Dr. Sudhansu Shekhar Shastri, Reader, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

14. Shrivaishnav, Ramsewak Das. *Shad karvedantra nandvedantayo : Brahmatatvavimarsh.* BHU. Dr. Sudhansu Shekhar Shastri, Reader, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

15. Shukla, Ganpati. *Sangparman mimansa.* BHU. Dr. G. Anjney Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

16. Shukla, Rajaram. *Hetvabhassamanyalakshansya krodpatradishagaveshnam.* BHU. Dr. G. Anjney Shastri, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

17. Suparna. *Nature and destiny of man in the philosophy of Shri Aurobindo.* BHU. Dr. U.C. Dubey, Department of Philosophy, Banaras Hindu University, Varanasi.

18. Tiwari, Nagendra. *Manu Smriti ka samaj darshan.* BHU. Dr. D.B. Chaube, Department of Philosophy, Banaras Hindu University, Varanasi.

19. Tripathi, Ayodhya Prasad. *Shrimad Bhagvatoktasvastutinimauda garikam darshanikshchya vivechanam.* BHU. Dr. Krishan Kant Sharma, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

20. Yadav, Shiv Pujan. *Madhyamika Buddha darshan.* BHU. Dr. (Miss.) U. Chaturvedi, Department of Philosophy, Banaras Hindu University, Varanasi.

Fine Arts

Drawing & Painting

1. Cupta, Ratan Kumar. *Bharatiya utkirna rekhachitra.* BHU. Prof. R. Dasgupta, Department of History of Art, Banaras Hindu University, Varanasi.

2. Ragman, Rubina. *European painting in Indian collection.* BHU. Prof. R. Dasgupta, Department of History of Art, Banaras Hindu University, Varanasi.

Music

1. Banerjee, Dipti. *Banaras kee sangeet parampara ka udbhav evam vikas.* BHU. Dr. (Mrs.) Pushpa Basu, Department of Instrumental Music, Banaras Hindu University, Varanasi.

2. Hariharan, Malini. *Sudha madhyama ragas in compositions of the musical trinity.* Kerala. Dr. M. Hariharan, Asstt. Prof., Deparment of Music, S.S.S.V. College of Music Madurai.

3. Johri, Madhu. *Hindu dharma mein sangeet ka samanvaya : Ek vishleshnatmak adhyayan.* BHU. Dr. (Mrs.) Pushpa-Basu, Department of Instrumental Music, Banaras Hindu University, Varanasi.

4. Parvatkar, Venamala. *Sangeet mein gayan parampara, Bharat aur Kotiya ke sangeet ka ek tulanatmak adhyayan, katipaya vartman vyavaharik udaharon sahit.* BHU. Dr. P.K. Dixit, Department of Vocal Music, Banaras Hindu University, Varanasi.

5. Valsala, B. Kumari. *Rare ragas and taalas of Kerala.* Kerala. Dr. (Mrs.) K. Omanakutty, Head, Department of Music, Govt. College for Women, Trivandrum.

6. Varma, B. Ranjini. *Musical aspects in Nalacharitham : A critical study.* Dr, (Mrs) K. Omanakutty, Head, Department of Must, Govt. College for Women, Trivandrum.

Language & Literature

English

1. D'Souza, Rita. *Sin and redemption in William Golding.* Kerala. Dr. K. Ayyappa Panicker, Prof., Institute of English, University of Kerala, Trivandrum.

2. Khanna. Anshuman. *Sidney Haward : A study in synthesis of craft and culture in his plays.* BHU. Dr. N. Siddiqui, Department of English, Banaras Hindu University, Varanasi.

3. Krishnakumar, S. *Theoretical orientation in the critical writings of Raymond Williams.* Kerala. Dr. K. Ayyappa Panicker, Prof., Institute of English, University of Kerala, Trivandrum.

4. Sharma, Meeta. *Dominant themes in Robert Frost's poetry.* Devi Ahilya. Dr. R.N. Sharma, Ex-Prof. and Head, Department of English, Govt. Arts and Commerce College, Indore.

5. Singh, Vansh Narayan, *Treatment of religious confliet in modern drama.* BHU. Dr. H. Swarup, Department of English, Banaras Hindu University, Varanasi.

6. Verma, Randhir Prasad. *Adrienne Rich : A study of her poetry.* BHU. Dr. (Mrs.) Alka Nigam, Department of English, Banaras Hindu University, Varanasi.

Sanskrit

1. Dwivedi, Shreyansh Kumar. *Bhrithari Nagesho : Shad tatva bhed vimarsh.* BHU. Dr. Bra Amal Shastri, Department of Vyakaran, Banaras Hindu University, Varanasi.

2. Giri, Kaivalyanand. *Adwaitvedant kee drishti se Vishnu Puran ka sameekshatmak adhyayan.* BHU. Dr. Ram Shankar Tripathi, Department of Vedic Darshan, Banaras Hindu University, Varanasi.

3. Kallianikutty, P. *Bhada-dhikkara : A study.* Kerala. Dr. E. Easwaran Nampoothiri, Prof, Department of Sanskrit, University of Kerala, Kariavattom.

4. Pandey, Ram Gopal. *Bhusankar Manjushakaryadhaiyatavarth vishye matbhed vimarsh.* BHU. Dr. Chandrabhanu Sharma Bhardwaj, Department of Vyakaran, Banaras Hindu University, Varanasi.

5. Sankaran, N.K. *Dialectics of Advaita Vedanta : A study with special reference to Brahmasutra Sankara bhashya.* Kerala. Dr. K. Maheshwaran Nair, Lecturer, Department of Sanskrit, University of Kerala, Kariavattom.

6. Tiwari, Arvind Kumar. *Haribhadra Shuri krit Yogshatak evam Ayurveda.* BHU. Dr. L.D. Dwivedi, Department of Ayurveda Samhita, Banaras Hindu University, Varanasi and Dr. R.P. Dwivedi, Department of Sanskrit, Banaras Hindu University, Varanasi.

7. Tripathi, Pranay Kumar. *Concept of psychosomatic disorders.* BHU. Dr. L.D. Dwivedi, Department of Ayurveda Samhita, Banaras Hindu University, Varanasi and Prof. G.P. Dubey, Department of Basic Principles, Banaras Hindu University, Varanasi.

Pali

1. Pal, Rajendra Prasad. *Vaidic evam sraman sanskriti : ek tulanatmak adhyayan.* BHU. Dr. K.C. Jain, Department of Pail and Buddhist Studies, Banaras Hindu University, Varanasi.

Hindi

1. Anitha, D.S. *Premchand aur Kesavadev kee kahaniyon ka samaj shastriya adhyayan.* Kerala. Dr. S. Christudas Chandran.

2. Balak Prasad *Parsi Hindi natak : Parampara aur pravittiyan.* BHU. Dr. Narvdeshwar Rai, Department of Hindi, Banaras Hindu University, Varanasi.

3. Chandrawanshi, Pushpa. *Padmawat ka lok tatva.* BHU. Dr. C.R. Yadav, Department of Hindi, Banaras Hindu University, Varanasi.

4. Das, Dharitri. *Sathottar Oriya aur Hindi kavitaon ka tulanatmak adhyayan.* BHU. Dr. V.N. Tripathi, Department of Hindi, Banaras Hindu University, Varanasi.

5. Faridi, Kahkashan. *Hindi Akhravat kavya parampara ke sandarbha mein Jaysi krit Akhsavat ka mulyankan.* BHU. Dr. J.A. Jafari, Department of Hindi, Banaras Hindu University, Varanasi.

6. Indu Velsar. *Comparative study of the poems of Anjay and M. Govindan.* Kerala. Dr. S. Christudas Chandran.

7. Maheshwari, Gayatri. *Swatantrata ke bad kee kavita : Visangati, vidambana aur antarvirodh, 1950 se 1970.* BHU. Dr. Ram Narayan Shukla, Department of Hindi, Banaras Hindu University, Varanasi.

8. Mishra, Richa. *Rashtriya andolan ka paripreksha aur pramukh Hindi.* BHU. Dr. V.N. Tripathi, Department of Hindi, Banaras Hindu University, Varanasi,

9. More, Ishwar Ramchandra. *Amritlal Nagar kee kahaniyon ka anusheelan.* Shivaji. Dr. S.S. Lavate, Nishainkur, Rananaware Colony, Ring Road, Salokhe Nagar, Kolhapur.

10. Patil, C.A. *Dr. Rangeya Raghav ke jeevan charitatmak upanyason ka anusheelan.* Shivaji. Dr. S.S. Lawate, 'Nishankur' Rananawaro Colony, Ring Road, Salokha Nagar, Kolhapur.

11. Premalatha, L. *Amritlal Nagar ke upanyason mein samajik evam sanskritik chetna.* Kerala. Dr. S. Christudes Chandran, Asst. Director, Hindi Research Centre, Kerala Hinai Prachar Sabha, Trivandrum.

12. Purwar, Anju. *Prasad ke natakon ka manobhasik adhyayan.* BHU. Dr. Nagendra Nath Upadhyaya, Department of Hindi, Banaras Hindu University, Varanasi.

13. Rai, Sudhir Kumar. *Sagun bhakti sahitya mein shaktatatwa : Ek anusheelan.* BHU. Dr. Shyam Sunder Shukla, Department of Hindi, Banaras Hindu University, Varanasi.

14. Rai, Usha. *Jayashankar Prasad ke katha sahitya ka mulya parak vishleshan.* BHU. Dr. M.N. Rai, Department o Hindi, Banaras Hindu University, Varanasi.

15. Rajeshwari. *Nirmal Verma ka katha-sahitya : Samvedna aur shilp.* HP. Dr. (Mrs.) Krishna Raina, Department of Hindi, Himachal Pradesh University, Shimla.

16. Rathee, D. *A comparative study of the folk songs in Hindi and Malayalam.* Kerala. Dr. N.I. Narayanan.

17. Rugmini Amma, B. *Kerala ke Hindi srijanatmak sahitya mein pratipadit nari patra.* Kerala. Dr. N. Chandrasekharan Nair, U.G.C. Emeritus Prof., Sreenikethan, Lakshmi Nagar, Pattom P.O., Trivandrum.

18. Sharma, Mamta. *Sathottar Hindi upanyason mein vyakti ke badalte ayam.* BHU. Dr. Pushpa Agrawal, Department of Hindi, Banaras Hindu University, Varanasi.

19. Sharma, Renu. *Hindi kahani : Tanav visangati aur vidambana, 1950 se 1970.* BHU. Dr. Ram Narayana Shukla, Department of Hindi, Banaras Hindu University, Varanasi.

20. Shirgaonkar, Neela Madhukar. *Hindi ke anchalik upanyason mein nari chitran.* Shivaji. Dr. T.L. Kotmire, Shree Warana Mahavidyalaya, Waranaagar, Distt. Kolhapur.

21. Singh, Anita. *Bhojpuri loksangeeton mein Ram katha.* BHU. Dr. Avdhesh Pradhan, Department of Hindi, Banaras Hindu University, Varanasi.

22. Singh, Himanshu Shekhar. *Mahatma Banadas ka nirgun Rambhakti kavya.* BHU. Dr. N.N Upadhyaya, Department of Hindi, Banaras Hindu University, Varanasi.

23. Singh, Vijaya Kumar. *Acharya Ramchandra Shukla ka itihas bodh.* BHU. Dr. Shyam Sundar Shukla, Department of Hindi, Banaras Hindu University, Varanasi,

24. Surve, Vasant Dadu. *Bhishma Sahani aur unke sahity ka anusheelan.* Shivaji. Dr. T.L. Motimire, Shri Warna Mahavidyalaya, Warnanagar, Distt. Kolhapur.

25. Syed Shahabuddin, A. *Amar Kant ka katha sahitya : Ek vishleshnatmak adhyayan.* Kerala. Dr. S. Christudas Chandran.

26. Upadhyay, Preeti. *Hindi bhakti kaleen sagun kavy mein vastsiya ras.* BHU. Dr. Nagendra Nath Upadhyaya, Department of Hindi, Banaras Hindu University, Varanasi.

27. Verma, Sushil Kumar. *Samsamyik katha-sahitya*. BHU. Dr. S.K. Singh, Department of Hindi, Banaras Hindu University, Varanasi

28. Yadav, Ram Awadh Singh. *Rashtriya ekta ke pariprekshya mein Kabir sahitya kee samajik prishthabhumi*. BHU. Dr. K.N. Tripathi, Department of Hindi, Banaras Hindu University, Varanasi.

Urdu

1. Abrahim, Henry Williams. *Urdu adab mein masihiyon ka kissa : Ek tarikhi aur tehkiki mutalea*. Devi Ahilya. Dr. Khalil Ahmed Siddiqui, Head, Department of Urdu, Govt. New Girls Post-graduate College, Indore.

2. Jamal, Azra. *Urdu noval mein Hindustan kee deli jindagi : Ek mutalee*. Devi Ahilya. Dr. (Mrs.) Kishwar Sultan, Department of Urdu Govt. Girls Postgraduate College Moti Tabela, Indore.

3. Jamal, Firdos. *Urdu shairi mein Hindustani anasir*. Devi Ahilya. Prof. Abdul Aziz Indori, Prof., Department of Urdu, Islamia Karimea Degree College, Indore.

4. Khan, Hafiz Masrur Ahmad. *Maulana Mohammed Ali Jankar : Hayat aur karname*. BHU. Dr. S.H.A. Naqavi, Department of Urdu, Banaras Hindu University, Varanasi.

5. Khan, Mohammad Nasir. *Madhya Pradesh kee aham Urdu kee adabi anjumne aur unki khidmad*. Devi Ahilya. Prof. Abdul Aziz Indori, Prof., Department of Urdu, Islamia Karimia Degree College, Indore.

6. Sayed, Aisha. *Tarakki pasant ofranon mein nisvani kirdar*. Devi Ahilya Prof Adul Aziz Indori, Prof., Department of Urdu, Islamia Karimia Degree Collage, Indore.

7. Tabassum Bano. *Qurrat-ul Ain Haider : Hayat aur fun*. BHU. Dr. Rifat Jamal, Department of Urdu, Banaras Hindu University, Varanasi.

Marathi

1. More, Chandrakant Shankar. *Shri Roma Vallabh Das: Charitra, parampara ani vangmaya*. Shivaji. Dr. V.S. Joshi, Kisan Veer Mahavidyalaya, WAI, Satara.

2. Sawant, V.D. *Kasala kadambreecha sarvageen abhyas*. Shivaji. Dr. G.M. Pawar, Department of Marathi, Shivaji University, Kolhapur.

3. Selvekar, Medha Madankumar. *Swatantrayottar kalateel samajik natakateel istri darshan kalmaryada, 1947 to 1985*. Shivaji. Dr. (Smt.) Neelam R. Hatekar, Department of Marathi, Kisanveer Mahavidyalaya, WAI, Satara.

Malayalam

1. Azad, R.P. *Malayalam novel, 1950-1970 : A structuralist pproach*. Kerala. Dr. V.S Ramakrishnan, Lecturer, Department of Malayalam, University of Kerala, Kariavattom.

2. Devi K.S. *Contribution of early periodicals to Malaya- am literary criticism*. Kerala. Dr. V. Gangadharan Nair, ub-Editor, Malayalam Lexicon, University of Kerala, Trivandrum

3. Rajalakshmi, R.B. *Problem plays in Malayalam : ased on the works of Prof N.K. Krishna Pillai*. Kerala. Dr. .V. Velayudhan Pillai. Prof., Department of Malayalam, niversity of Kerala, Kariavattom.

4. Rajasekharan Nair, P.K. *Evolution of vision in Malaya- m novel : A study based on C.V. Raman Pillai, Vaikkom hammed Basheer and O.V. Vijayan*. Kerala. Dr. George Onakkoor. N.K. Director, State Institute of Children's Literature, Sanskrit College Campus, Trivandrum.

5. Shaji, S. *Historical themes in Malayalam dramas*. Kerala. Dr. P. Gopalakrishnan Nair, Departmeut of Malayalam, University College, Trivandrum.

6. Sudharma, A.K. *A comparative study of characters in the historical novels Vrindavanlal Verma and C.V. Raman Pillai*. Kerala. Dr. Vellayani Arjunan, Jeesha, Thyeaud, Trivandrum.

Telugu

1. Renuka, M. *Characterization in Gurajadas kanya sulkam*. BHU. Dr. Trivikramaiah, Department of Telugu, Banaras Hindu University, Varanasi.

2. Shankaraiah, Dhupam. *A contrastive and co-relative study of Hindi and Telugu context second language teaching*. BHU. Prof. J.S,P. Rao, Department of Telugu, Banaras Hindu Universiry, Varanasi.

3. Srinivasa Rao, Ilindraparthi. *Bhakti movement in Telugu and Hindi : A comparative study*. BHU. Dr. B. Viswanadh, Department of Telugu, Banaras Hindu University, Varanasi.

4. Sudha, Kalahasti Sree. *Evolution of Telugu during 16th and 17th century in Chittur Distt. A.P.* BHU. Dr. G. Trivikramaiah, Department of Telugu, Banaras Hindu University, Varanasi.

5. Vardhanam, Nalluru Sesha. *A critical study of Shr, Venkateswara in Telugu literature*. BHU. Prof. J.S,P. Rao, Department of Telugu, Banaras Hindu University, Varanasi.

History

1. Basheer, M. *Rama Varma Sakthan Thampuran and his times. 1790-1805*. Kerala. Sri A.P. Ibrahim Kunju, Prof. (Retd.) Rail View, Kaniyapuram.

2. Grewal, Mandeep. *Social and economic ideas of Lala Lajpat Rai*. BHU. Dr. K.S. Santha, Department of History, Banaras Hindu University, Varanasi.

3. Gupta, Santosh Kumar. *Shail chitron mein ankit akhet drishyon ke pashu pakshi tatha shastro ke sanjati britteya: Puratatvik anusheelan*. BHU. Dr. Bhupendra Pal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

4. Khan, Ali Ahmed. *Trade credit banking and currency system of early medieval North India*. BHU. Dr. A.L. Yadav, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

5. Mrityunjay Kumar. *Maurya yugeen krishi vyavartha*. BHU. Dr. Laxman Rai, Department of History, Banaras Hindu University, Varanasi.

6. Nadooshan, Farhang Khadani. *The parthians and the Kushanas : Their history and coinage*. BHU. Dr. N. Ahmad, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

7. Nirmala, S. *A history of the Devadasis of Travancore*. Kerala. Dr K.K. Kusuman. Reader, Department of History, University of Kerala, Kariavattom.

8. Pandey, Ram Nath. *Katyaran-Smriti ke vidhik samagree ka alochanatmak adhyayan*. BHU. Dr. A.L. Yadav, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

9. Pisipaty, Siva Ram Krishna. *Early historical archaeology of Andhra : A study of Andhra culture*. BHU. Dr. (Miss)

V. Jaiswal, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

10. Sahu, Babita. *Political and cultural history of North India fram 550 lo 650 A.D.* BHU. Dr. T.P. Verma, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

11. Singh, Anand Kumar. *Cultural interaction in Aneient Afganistan, 6th century BC to 19th century A.D.* BHU. Prof. V.C. Srivastava, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

12. Singh, Ran Vijai. *Pracheen itihas sanskriti evam puratatva.* BHU. Dr. A.L. Yadav, Department of Ancient Indian History, Culture and Archaeology, Banaras Hindu University, Varanasi.

13. Srivastava, Akhilesh Kumar. *Freedom and State Legislature of U.P.* BHU. Dr. K.S. Santha, Department of History, Banaras Hindu University, Varanasi.

14. Varma, K.A. Prasanna. *History of industrial development in Travancore, 1900-1947.* Kerala. Dr. M.J. Koshy, Prof. and Head, Department of History, University of Kerala, Kariavattom.

15. Varughese, George. *The 1954 Praja Socialist Party (PSP) Ministry of Travancore-Cochin with special reference to socio-economic change in Travancore and Co chin.* Kerala Dr. M.J. Koshy, Prof. and Head, Department of History University of Kerala, Kariavattom.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Ghosh, Swapna. *Cognitive style and personality needs of the high and low achievers in science and humanities at higher secondary level.* Calcutta.

2. Seshadri Prema, *An empirical investigation of motivational processes and executive effectiveness.* Bangalore, Dr. G. Mohan Kumar, 903, 1st Floor, 18th Main, 5th Block, Rajajinagar, Bangalore.

3. Verma, Sanjay Singh. *A study of frustration modalities and neurotic tendencies as a result of perceived parental rejection.* H.S. Gour. Prof. Jai Prakash, Head, Department of Psychology, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Sociology

1. Gyasuddin Ahmed. *Social stratification among the Muslims of Assam : A study based on three selected villages in the District of Sibsagar.* Dibrugarh. Dr. D. Doley, Prof., Department of Sociology, Dibrugarh University, Dibrugarh.

2. Jogdand, Pralhad Gangaram. *Protest movement and social change : A study of dalit movement in Maharashtra.* Marathwada. Dr. R B. Bilawar, Reader, Department of Sociology, Marathwada University, Aurangabad.

3. Thomas, Gracius. *A comparative study of approaches of voluntary agencies in maximising people's participation in rural development.* Devi Ahilya. Dr. Ramesh Chandekar, Department of Sociology, Indore Christian College, Indore.

4. Venkataratnam, Tripurana. *Tribal peasant struggle of Srikakulam, 1950-75.* Andhra.

Social Anthropology

1. Majumdar, Binapani. *Status of women in Tripura studies with cultural-historical approach.* Calcutta.

Political Science

1. Bali, Pushpa. *Case study of the major Presidential Ordianaces (Political) in India, 1950-1980.* Delhi.

2. Bandyopadhyay, Tapan Kumar. *Concept of the party from Marx to Gramsci.* Calcutta.

3. Barua, Indira. *Politics of immigration into Assam since independence.* Gauhati, Dr. V V. Rao, Emeritus Prof. Department of Political Science, Gauhati University, Guwahati.

4. Khan, M.S. *Administration of justice in Chhatisgarh region with special reference to Bilaspur Division.* Ghasidas. Dr J.P. Sharma.

5. Narottam Gaan. *Decision making in Indian foreign policy : The Bangladesh crisis.* Utkal.

6. Rajinder Kaur. *Politics of Sikh homeland.* HP.

7. Sanyal, Sisir Kumar. *The social and political ideas of Annie Besant.* Calcutta.

8. Sarma, Ramesh Chandra. *Library administration in Assam.* Gauhati. Dr. V.V. Rao, Emeritus Prof., Department of Political Science, Gauhati University, Guwahati.

9. Srinivasulu, K. *Telangana peasant movement and change in the agrarian structure : A case study of Nalgonda District.* JNU. Prof. Balveer Arora, Assoc. Prof., Centre for Political Studies, Jawaharlal Nehru University, New Delhi and Prof. K. Seshadri.

10. Verma, Ambika Prasad *Madhya Pradesh kee rajniti mein asantusht gut kee bhumika, 1956 se vartman tak.* Ghasidas. Dr. D.P. Shukla.

Economics

1. Kapur, Sada Nand. *Some aspects of India's export behaviour.* Delhi.

2. Khanchi, Mehar Singh. *Utilisation and impact of cooperative credit on Haryana agriculture.* Kurukshetra.

3. Krishna Murthy, Bheesetti China *Rehabilitation of weaker sections in industry, business and service sectors through IRDP : A case study in Visakhapatnam District of Andhra Pradesh.* Andhra.

4. Mahendra Dev, S. *Dimensions of interregional variations in agricultural development in India.* Delhi.

5. Mathur, Naresh Dutt. *Price policy in public enterprises : A case study of certain public enterprises in India.* Rajasthan. Prof. Om Prakash, 1/245, Mansarovar, Jaipur.

6. Mathur, Sunita. *Labour welfare policies and practices in state enterprises : A study of Rajasthan Electricity Board.* Rajasthan. Dr. B.L. Mathur, 35, Sudershan Enclave, Behind Shakar Bhawan, Bhawani Singh Road, Jaipur.

7. Mohite, Sheshrao Madhavrao. *A study of constraints faced by farmers regarding utilization of canal irrigation water in Jayakwadi Command Area.* Marathwada Krishi. Dr. G.G. Nandapurkar, Head, Department of Agricultural Extension, Marathwada Agricultural University, Parbhani

8. Mulini Darshan, Golla. *A study of productivity trends of Stevedore mazdoors in the Visakhapatnam Dock Labour Board.* Andhra.

9. Ramachandra Yogi, Baswani. *Labour participation and earnings in the urban informal sector : A case study of Vijayawada City.* Andhra.

10. Sailaja, M. *Productivity in the services sector : The case of Indian Railways, 1950-51 through 1985-86.* Delhi.

11. Saraswathamma, Aduru. *Trends and determinants of public expenditure in Andhra Pradesh, 1970-71 to 1985-86.* Andhra.

12. Sarojini, Muppidi. *Federal fiscal transfers in India, 1961-62 to 1983-84.* Andhra.

13. Soni, Manilal Chhabildas. *Rural youth's perspective of rural development.* Marathwada Krishi. Dr. G.G. Nandapurkar, Head, Department of Agricultural Extension, Marathwada Agricultural University, Parbhani.

14. Verma, Bimla Devi. *A socio-economic study of economically weaker sections in Himachal Pradesh : A case of Bilaspur District.* HP.

Law

1. Baig, Mriza Ahsan Ali. *A critical analysis and appraisal of agrarian reforms with reference to Orissa in view of Directive Principles of State Policy.* Berhampur.

2. Mohammed Akram Mir. *Socio-legal dissections of guarantees—Commercial and non-commercial, including bank guarantees and judicial trends.* Aligarh. Prof. S. Misbahul Hasan, Reader, Department of Law, Aligarh Muslim University, Aligarh.

3. Raj Pal. *Changing dimensions of corporate management : Legal and critical study.* Kurukshetra.

Public Administration

1. Siva Prasad. *Administration of central public enterprises in India with special reference to the organisation and working of the Hindustan Cables Limited, Hyderabad.* Osmania.

2. Vaid, Pradeep Kumar. *An analysis of management of Himachal Pradesh Tourism Development Corporation Limited, Shimla (HPYEC).* Panjab.

Education

1. Appa Rao, Penta. *A study of the administration and educational programmes of Visakhapatnam Borstal School.* Andhra.

2. Bhattacharyya, Sabitri. *A study of the educational problems and guidance needs of the scheduled tribe and scheduled caste female students of secondary stage in Tripura.* Calcutta.

3. Jain, Sushma. *Madhya Pradesh aur Rajasthan mein prud shiksha karyakram evam smasyayen.* HS Gour. Prof. S.P. Ahluwalia, Head, Department of Education, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

4. Madan, Manju Rajendra. *A study of pupils motivation and origin and pawn concept in the classes with high and low performance.* Baroda.

5. Majumdar, Reba. *A study of academic motivation of youth in Calcutta in the context of achievement motivation, academic performance, vocational aspiration and self-concept.* Patel. Dr. I.A. Vora, Principal, M.B. Patel College of Education, Sardar Patel University, Vallabh Vidyanagar.

6. Malhotra, Ved Kumar. *A critical study of the existing facilities of science-teaching and construction of evaluation-instruments for its supervision in different types of secondary schools in Delhi.* Delhi.

7. Pradhan, Basanti. *Effect of training in creative thinking on creativity and achievement of secondary school pupils.* Berhampur.

8. Sambhi, Punam. *A study of the value pattern and some personality variables of the students studying in three institutions : Sri Satya Sai Higher Secondary School, Missionary School and Central School in Andhra Pradesh.* HP.

9. Sema, Somneuk. *A study of teacher education programme for rural development in Thailand.* Baroda.

10. Sharma, Sudesh Kumar. *A study of risk taking behaviour in relation to cognitive and non-cognitive attributes.* Jammu. Dr. S.P. Suri, Reader, Department of Education, University of Jammu, Jammu.

11. Sood, Kamla. *Comparison of advance organiser and reception strategies for acquisition of language concepts in relation to cognitive style, intelligence and creativity.* Panjab.

Commerce

1. Aswathappa, K. *Materials management in large industrial units.* Bangalore. Dr. D.R. Krishnaswami, "Sri Sathya" 674, 15th Main Road IVth 'T' Block, Jayanagar, Bangalore.

2. Madhu. *Evaluation of commercial banks performance relating to district credit plan.* HP.

3. Mishra, Devi Prasad. *Prediction of industrial sickness : A study of the corporate sector in India.* Berhampur.

4. Sanjeevaiah, B.C. *A comparative study of the performance of rural based credit institutions : Cooperative credit societies, farmers' service societies and regional rural banks.* Bangalore. Dr. O.R. Krishna Swami, "Sri Sathya" No. 674, 15th Main Road, IV 'T' Block, Jayanagar, Bangalore.

5. Sharma, Keshav. *Marketing of fresh fruits of J & K State.* Jammu. Dr. M.R. Rana.

6. Syan, Jitendrasingh Kundansingh. *Delegation of lending powers of commercial banks in India : A study of selected Indian banks.* Baroda.

Home Science

1. Bakshi, Meenakshi Vedrattan. *Study on the impact of Mega Vitamin A dosing with and without anthelminthic therapy on the Vitamin A status and morbidity profile of under privileged school boys, 9-15 years.* Baroda.

2. Kunzru, Vidhu. *Studies in wash and wear finishing of textiles.* Baroda.

Management

1. Suryaprakasa Rao, K. *On interruptions optimal configurations and productivity in a complex production system : Some computer simulation models.* IISc.

MINISTRY OF HUMAN RESOURCE DEVELOPMENT

(DEPARTMENT OF EDUCATION)

JAPANESE GOVERNMENT SCHOLARSHIP, 1991-92

Applications are invited on plain paper from Indian nationals residing in India for the award of 13 scholarships offered by the Government of Japan for the year 1991-92 for Post-graduate study/research. Two scholarships are reserved for Japanese Language and Literature. The subjects in which scholarships will be awarded are given below :

(1) Microprocessors Applications/Technology, (2) Opto-Electronics; (3) Fibre-optics; (4) Quality and Reliability Engineering (as applied to various systems like Electricity and Power, Railways, Heavy Industry, Heavy Electricals, Electronics and Communications etc.); (5) Robotics; (6) Remote Sensing; (7) Laser Technology; (8) Textile Engineering/Technology; (9) Bio-technology; (10) Ship-Building; (11) Biological Oceanography; (12) Pedagogy; (13) Fine Arts (Painting, Sculpture, Aesthetics; and (14) Japanese Language and Literature.

Duration : 1-1/2 to 2 years.

Value : Maintenance allowance of 1,78,500 Yen per month (in FY 1989), arrival allowance of 25,000 Yen, Field study allowance, Tuition and Examination fees exempted; part of the medical expenses in Japan paid, Accommodation will be arranged.

Passage Cost : Tourist class air-ticket from India to Japan and back will be provided by the Japanese Government.

Age Limit : Below 45 years on 1st April, 1981 (i.e. born on or after 2nd April, 1956) relaxable upto 2 years for SC/ST candidates.

Qualification : The minimum qualification for Textile Engineering, Ship-Building and Japanese Language & Literature would be a bachelor's degree in a subject or a related field. The minimum qualification in Fine Arts would be a bachelor's degree or a diploma in Fine Arts. For other subjects the minimum qualification would be a Master's degree in the subject concerned or a related field.

Essential Experience : Except for subjects at S. No. 13 and 14 above, after obtaining the prescribed qualifications, candidates should possess atleast two consecutive years of practical research/teaching experience as on 1st April, 1990.

Note : (i) The following must be attached with the Application : (a) Attested copy of the certificate certifying the date of birth; (b) Attested copy of the marks sheet of the qualifying exam ; and (c) Attested copies of all degrees/diplomas/certificates etc. (ii) Only candidates who secured 60% marks or more at the prescribed qualification are eligible, (iii) Where Grades are mentioned, the candidate must indicate the conversion formula adopted by the University/Institution and should give equivalent percentage of marks, (iv) Equivalent foreign degrees will be considered. (v) Candidates, who have already been abroad for study/research/training for more than six months at a time either on a scholarship or on their own, are eligible to apply only if they have been in India for at least three years after return from abroad. Applications of candidates, who are abroad, will not be considered. (vi) Master's Degree means M.A./M.Sc./M. Tech./M.E. but not M. Phil or Pre-Ph. D. (vii) Candidate should have adequate knowledge of geographical situation, culture and heritage of India and Japan, (viii) Applications in subject-fields other than those prescribed will not be considered. (ix) Candidates who do not possess the requisite qualifications need not apply. (x) Employed candidates must send their applications through their employers with "No Objection Certificate", otherwise these will not be considered. However, advance applications will be considered. Provisionally pending sponsorship by employers. Advance application must be complete in all respects. (xi) Applications, which are incomplete, will not be considered. Applications should be strictly according to the Format given below.

Candidates should apply for the above scholarship on a plain paper preferably typed or neatly hand written with a recent possport size photograph, furnishing the following details/particulars to the Secretary, Deptt. of Education, Ministry of Human Resource Development, ES-3 Section, Room No. 516, B-Wing, Shastri Bhawan, New Delhi-110 001 by **30th May, 1990.** The applications received late will not be entertained.

FORMAT

Affix Photo
here

1. Name of the Scholarship Scheme;
   Japanese Government Scholarships, 1991-92.
2. Subject (write any of the 14 subjects given in the Advertisement) :
3. Name of the Candidate (in Block letters) :
4. Full mailing address :
   (a) Present :
   (b) Permanent :
5. Nationality :
6. Father's name :
7. Date of birth. Age in years and state to which the candidate belongs :
8. Whether a member of SC/ST or a tribal or aboriginal community. If so, give full particulars :
9. Academic record starting from high school/higher secondary :

Name of the University Board/ Institution	Examination(s) passed	Year of passing	Division/class with position, if any. Otherwise equivalent Class/ Division may be given alongwith the Grades	%age of marks obtained & position, if any. Otherwise equivalent %age may be given	Subjects taken
1	2	3	4	5	6

(Note : Where there is no Division/Class is awarded and only Grading done, the conversion formula adopted may be given).

10. Details of Professional/Practical Training and Research Experience specifying the period and number of papers published, previous employment with name and date of employment, if any :
11. Nature of the present employment with date of appointment, designation and the name and address of the employers :
12. Have you been abroad ? If so, give full particulars of the country and the period. Also, mention the year and month of return to India :
13. Proposed programme of study/research/training, specifying :
    (i) the work at present engaged in; (ii) nature and programme of study/research desired; (iii) future plans/prospects after the proposed studies/research; and (iv) how are these related to the technical or economical development of India ?

Place :
Date :

(Signature of the Candidate)

davp 89/1279

WILDLIFE INSTITUTE OF INDIA

P.O. NEW FOREST, DEHRADUN

An Autonomous Institution of the Ministry of Environment and Forests

Advertisement No. A/2-14/88-WIL.

Applications are invited for appointment to four (4) posts of Research ASSOCIATE. Selected candidates will be fixed at a consolidated amount within one of the 4 slabs depending upon qualifications, experience and performance in the interview :

1. Rs. 2200-100-2700
2. Rs. 2700-100-3200
3. Rs. 3200-100-3700
4. Rs. 3700-100-4325

They will not be entitled to D.A., C.C.A., H.C.A., Bonus, L.T.C., retirement benefits. Other requirements of the posts are given below :

Requirement of four Research Associates :

1. **Environmental Impact Assessment Studies. Two Posts.** Experience on environmental impact studies of major developmental projects/plant ecology studies dealing with grassland/forest ecosystems/Wildlife research.
2. **Studies on wet grasslands dealing with management of critically endangered species : One Post** Experience of research on endangered species, specifically large carnivores/herbivores, preferably with some experience on the projects dealing with management of endangered species.
3. **Project on distribution and status survey of pheasants in North-East India. One Post.** Experience and knowledge or Himalayan ecosystems, game birds, ecological survey, interest in working in the field of applied ecology and conversation planning in North-East India.

   Educational Qualifications : Doctorate (Ph.D.) Degree in Botany/Zoology/Wildlife/Environmental Sciences/Experimental Biology and Biological sciences.

   Age : Research workers preferably below the age of 40 years (relaxable in the case of candidates belonging to SC/ST upto a maximum of 5 years.)

   Period of Appointment : Initially for a period of three years extendable for another term not exceeding two years.

How to Apply : Applications in the prescribed form Annexure-1 duly completed by the candidates alongwith copies of necessary certificates/testimonials should reach the Director, Wildlife Institute of India, P.O. New Forests, Dehradun-248006 **within 15 days from the date of issue of the advertisement.** Applications should be sent by registered post in a marked envelope "Applications for the Research Associate". Candidates already in some employment should send applications through proper channel.

ANNEXURE-1

WILDLIEE INSTITUTE OF INDIA
P.O. NEW FOREST, DEHRADUN-248 006 (U.P.)

APPLICATION FORM FOR THE RESEARCH ASSOCIATESHIP

Category : General/SC/ST/Physically Handicapped (please indicate on top).

1. (a) Name of the applicant, designation and full address :

   ____

   ____

   ____

   (b) Present Residential Address ______________________________

   ____

   (c) Permanent Address ______________________________

   ____

   (d) Nearest Rly. Station for undertaking the Journey ______________

2. Date of Birth ______________ Age ______________ Year ______________
3. If belonging to Scheduled Castes/Scheduled Tribes, State name of the Caste/Tribe ______________

A photostat copy of the Original caste certificate issued by competent authorities may be attached.

4. (a) Academic Achievements :

Examination Passed	Year	University	Subject	Division with percentage of marks or grade along with copies of mark sheet & certificate	Encl. No.

Higher Secondary : ______________________

Bachelor Degree : ______________________

Master's Degree : ______________________

Ph. D./Equivalent Examination : ______________________

(b) Creative Achievement (State briefly your biodata as a research worker/giving details of research papers, participation in Seminar, Symposium, Conference etc.)

____

____

____

5. Have you had any scholarship/fellowship before applying for this award ? (If so, please give its source, value, period & details of work done under that award) ______________________

Name of the Scholarship	Awarding Agency	Period		Amount
		From	To	

6. Employment held so far (up to date) :

Name of the Employer	Position held	Period		Emoluments per month
		From	To	

7. Research publications, title of the publication, year of publication, journal etc. may kindly be indicated (Reprints may be enclosed).

8. Title of Ph.D. thesis, name of the guide and an abstract of Ph.D. thesis in about 500 words (in a separate sheet) may be submitted.

9. Order of preference for the advertised projects (mention No. and name of the project).

10. Name and address of three persons in other University/Research Institute actively engaged in some areas of research to whom a reference could be made :
1.
2.
3.

11. Certified that :

(a) I have not received and do hereby undertake not to receive any financial assistance on this proposal from any agency, whatever.

(b) I have understood all conditions of award that I agree to abide by those conditions.

(c) I shall submit an undertaking regarding conditions of award at the time of accepting the fellowship.

(d) Informations furnished above are correct to the best of my knowledge.

____
(Signature of the Applicant)

Place :
Date :

Sanjay Gandhi Post-Graduate Institute of Medical Sciences

Post Box No. 375, Raebareli Road, Lucknow-226001 (U.P.)

Advertisement No. 124/90 **Last Date : May 5, 1990**

REQUIREMENT FOR SENIOR RESIDENTS

Applications are invited for selection of Senior Residents in the following specialities for Hospital Services (Session starts from 1st July, 1990):

1. Neurosurgery 2. Neuro-otology 3. Neurology 4. Cardiovascular Surgery 5. Cardiology 6 Urology 7. Nephrology 8. Surgical Gastroenlerology 9. Surgical Endocrinology 10. Medical Endocrinology 11. Medical Genetics 12. Clinical Immunology 13. Pathology 14. Microbiology 15. Transfusion Medicine 16. Radiology 17. Nuclear Medicine 18. Radiotherapy 19. Anesthesiology-cum-Critical care.

NOTE : The number of vacancies in each speciality is tentatively one which may increase at the time of selection. However Chairman, Selection Committee reserves the right to cancel selection on any seat.

Qualifications :

(a) The applicants should possess M.D./M.S. or equivalent recognised Post-Graduate qualification in the parent discipline.

(b) The candidates must be registered with Central/State Medical Council.

(c) **For Nuclear Medicine :**

Senior Residents : M.B.B.S. with D.R.M. may be considered.

Upper Age Limit :

Maximum age as on 01.07.1990, 35 years. Relaxable by 5 years for SC/ST candidates.

Reservation :

Reservation for SC/ST candidates exists as per rules. In case candidates belonging to reserved categories are not available, vacant seats will be filled from general list.

General Conditions :

1. No candidate can apply for more than one speciality.

2. The recruitment to the posts will be made on All India Basis.

3. The emoluments to Senior Residents payable will be Rs. 3000-3100-3200 fixed including PGA & NPA respectively in first, second & third year. Other allowances excluding CCA may also be provided. (The emoluments likely to be revised as admissible of AIIMS, New Delhi).

4. The appointments on these posts will be made on year to year basis subject to satisfactory work and conduct upto a maximum period of three years tenure.

5. Candidates will be selected strictly on merit determined on the basis of selection test which will consist of a written examination followed by departmental test and interview.

6. The Test/Interview will be held on **May 27th & 28th, 1990** at SGPGI, Lucknow.

7. The merit list will be valid for a period of one year.

8. Candidates are requested to send applications on plain paper but Application must be accompanied with the attested copies of the certificate in support of age, qualifications with year of passing the examinations and marks, experience, caste (if belongs to SC/ST), names of two references alongwith a crossed Bank Draft of Rs. 200/- (Rupees two hundred only) as non-refundable fee payable to "**Sanjay Gandhi Post-Graduate Institute of Medical Sciences**".

Candidates in employment must get their applications duly forwarded.

Incomplete applications are liable to be rejected.

Prof. B.B. Sethi
DIRECTOR

CLASSIFIED ADVERTISEMENTS

REGIONAL ENGINEERING COLLEGE

SILCHAR (ASSAM) 788 010

Advertisement No. 1/90 (Estt).

Dated : 7th April, '90.

Applications are invited from the citizens of India for the following posts :

1. Professor in Computer Science and Engg.—1/Electronics and Tele-Com. Engg.—1/Electrical Engg.-1/Civil Engg.—1.
2. Assistant Professor in Civil Engg. —3/Electrical Engg.—2/Electronics and Tele-Com. Engg.—3/ Computer Science and Engg.—1/ Mechanical Engg.—1/Applied Mechanics Engg.—2.
3. Lecturer in Electrical Engg.—4/ Electronics and Tele-Com. Engg. —1/Computer Science and Engg. —1/Mechanical Engg.—2/Chemistry—1/Humanities (English) —1.

Scale of Pay

1.	Professor	: Rs. 4500-150-5700-200-7300/- P.M.
2.	Asstt. Professor	: Rs. 3700-125-4950-150-5700/- P.M.
3.	Lecturer	: Rs. 2200-75-2800-100-4000/- P.M.

Requisite qualification and experience for the post of Professor : (i) Ph.D. with 1st class degree at Bachelor's or Master's level in Engineering/Technology.

(ii) 10 (Ten) years experience in Teaching/Industry / Research out of which 5 (Five) years must be at the level of Asstt. Professor or equivalent.

Note : Candidates from Industry/ Profession with recognised professional work of high standard recognised at National/International level equivalent to Doctorate would also be eligible.

Requisite qualification and experience for the post of Assistant Professor : (i) First Class Master's degree in appropriate branch of Engineering/Technology.

(ii) 5 (Five) years experience in Teaching/Industry / Research at the appropriate level.

Note : Candidates from Industry/ Profession with recognised professional work equivalent to Master's degree in the case of Engg./Tech. would also be eligible.

Desirable : Ph.D. degree in engineering/technology.

Requisite qualification and experience for the post of Lecturer in Engineering subjects : 1st class Bachelors Degree in appropriate branch of Engineering/ Technology.

Requisite qualification and experience for the post of Lecturer in Humanities (English) and Chemistry : 1st class Master's degree in appropriate branch of stddy.

Specialisation : In any one or more of the following fields :

1. **Professor in Civil Engg. :** Environmental Engg./Highway Engg.

2. **Asstt. Professor in Civil Engg. :** Structural/ Highway / Surveying / Soil Mech. Engg.

3. **Asstt. Professor in Mechanical Engg. :** Industrial Engg./Production Engg./Design/Thermal Engg./Computer Aided Design and Manufacturing,

4. **Specialisation for the post of Professor and Asstt. Professor are mentioned below discipline wise :**

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Editor :
SUTINDER SINGH

Indian-English Texts as English-Teaching Material

K. Venkata Reddy*

The traditional view is that it is better to learn English from an Englishman's English or an American's English than from an Indian's English. Most Indian teachers of English subscribe to this view and generally resist the idea of using Indian writing in English as English-teaching material for Indians. Small wonder, therefore, if the anthologies of prose, poetry and short stories prescribed for study at the Intermediate and Degree levels are dominated by non-Indian writers.

Paradoxically enough, the same teachers have no hesitation in teaching English as a full time and life long profession. What is more, they assess others' competence in English, write books on English grammar and usage, discuss the subtleties of English literary texts and do a number of things which contradict their mistrust in the classroom of a text composed in English by a fellow Indian.

What we have to realize is that where the main purpose is to teach the English language, the national origin of the writer does not matter so long as the English he has used is grammatically correct, lexically varied and stylistically interesting in composing a text that is intellectually as well as artistically valid. As a matter of fact, when grammar, lexi and syntax are at work upon a culture-content that is familiar to the Indian student, such material would prove more malleable as a teaching text than an essay by Robert Lynd or a sketch by G.K. Chesterton or a poem by T.S. Eliot.

The great advantage an Indian-Engish text enjoys in our classrooms over any British or American text is that the student has direct access to the culture surrounding the text, even outside the classroom. He can be persuaded to see the text not only as something printed on a page but as something related to him in real life, as well. When the culture connotations of a text pose no barriers, the learner can grapple directly with the language of the text.

This point is seldom conceded to by those who are in favour of British/American English texts. They argue that in learning a foreign language one also learns, about a foreign culture, and that the two processes supplement and reinforce each other. This is not untrue. But the point is that the whole process of learning the English language would be facilitated if the Indian student were to learn the English language on familiar grounds before approaching unfamiliar contexts through it. Hence the desirability of learning English preferably through an Indian-English text.

Original creative writing in English by Indians is a relatively recent growth, no older than the last one hundred years. So it is relatively limited in quantity and variety. But, we can certainly depend upon the resources of Indian writing in English translation which, if properly

(*Contd. on page 5*)

**Department of English and Comparative Literature, Sri Krishnadevaraya University, Anantapur-515003 (A.P.).*

Basic Education in Jamia Millia

Masroor Hashmi*

The Experiment at Tolstoy Farm

Twenty one miles from Johannesburg was an eight acre farm which was purchased by some members of Indian community of South Africa of which Gandhiji was the moving spirit. This farm developed into a settlement whose inmates led a life of service and dedication for the good of Indian community. An important activity of the settlement was the publication of the journal *Indian Opinion*. Another important activity was the school where the first experiment of Basic Education was conducted by Gandhiji. In his scheme of education "the culture of heart or the building of character"[1] held the first place. He believed that if character of children was properly built, they will learn themselves or with the help of their friends.

He did appreciate the necessity of literary training for which classes were held in the afternoon, because all the inmates of the settlement including children were busy in all sorts of odd activities like scavenging etc., in the forenoon. A maximum of three periods were allotted to literary training of the children. Since children were a heterogeneous mixture of Muslim, Hindu, Parsi, Christian boys and some Hindu girls who spoke Urdu, Hindi, Tamil and Gujarati, Gandhiji and his fellow teachers had to teach these languages and other subjects through vernaculars. In addition to languages and subjects, English was taught in the school with utilitarian considerations.

Vocational training was an essential component of the education given at the Tolstoy farm. One of the teachers, Mr. Kallenbach learnt shoe-making at a monastery, and in turn, taught it to Gandhiji. Two teachers knew carpentry, and almost all teachers and students knew cooking. The choice for a vocation was to be made by individuals themselves. One of the guiding principles with regard to manual work was that such work should be done by teachers and students together.

For a better realization of God and own's own self, Gandhiji felt the necessity of training the spirit. This was not possible merely by reciting hymns or scriptures, though they were important as a part of one's intellectual training. Spiritual training could be given to children by an exercise of the spirit. Elaborating his idea of exercise of spirit he wrote, "It would be idle for me, if I were a liar, to teach boys to tell the truth. A cowardly teacher would never succeed in making his boys valiant, and a stranger of self-restraint could never teach his pupils the value of self-restraint. I saw, therefore, that I must be an eternal object-lesson to the boys and girls living with me."[2] Evidently spiritual training was to Gandhiji what we now call value education, and the method best suited to this kind of training was teaching through one's own example.

The experiment was done around 1912. In 1914, the year of the beginning of the First World War, he sailed homeward via England. Here the political challenge was of such magnitude that only a Gandhi could meet it successfully. He devised novel methods of agitation based on his idea of *Ahimsa*, and infused so much love and humanism in his dealings with members of other communities that soon he grew into a popular mass leader Mawlana Mohammad Ali and Mawlana Shaukat Ali found in him an ordant supporter of *Khilafat movement* which merged into Non-Cooperation movement. Jamia owes its birth to these movements.

In the Columns of Harijan

In 1937, Gandhiji wrote some articles in the *Harijan* by way of clarifying his idea of Basic Education, and to meet the criticism made in educational quarters about the afficacy of the scheme. In answer to one such criticism raised by a professor he explained the scheme on September 18, 1937. He wrote : "Taken as a whole a vocation or vocations are the best medium for all round development of a boy or a girl, and therefore all syllabus should be woven round vocational training".[3] Then to meet a specific point of criticism he wrote : "The Professor questions the possibility of giving arithmetical and other training through vocations. Here he speaks without experience. I can speak from experience. I had no difficulty in giving at the Tolstoy farm (Transvaal) all round development to the boys and girls for whose training I was directly responsible. The central fact is there was vocational training for nearly eight

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**Reader in Education, Department of Teacher Training and Non-Formal Education, Jamia Millia Islamia, New Delhi-110025.*

hours. They had one, or at the most, two hours of book learning. The vocations were cooking, scavenging, sandal-making, digging, simple carpentry and messenger work. The ages of the children ranged from six to sixteen. That experiment has been since much enriched."

Further explaining his idea of manual work for the benefit of Mr. Ravi Shanker Shukla, the then Education Minister of the Central Province, he said : "I am told that Messrs. Abbot and Wood recognize the value of manual work as an important part of rural education. I am glad to be supported by reputed educationists. But I do not suppose they place on manual work the kind of emphasis I place. For I say that the development of the mind should come through manual training. The manual training will not consist in producing articles for school museum, or toys which have no value. It should produce marketable articles. The children will not do as children used to do under the whip in the early days of the factories. They will do it because it entertains them and stimulates them."[4]

At another place he wrote : "I would therefore begin the child's education by teaching it a useful handicraft and enabling it to produce from the moment it begins its training. Thus every school can be made self-supporting, the condition being that the state takes over the manufactures of the school"[5] Gandhiji was not a mere theoretician who would confine his thinking to the educative value of craft and the physical, cognitive and spiritual aspects of education. He was a practical man of great foresight. His was the scheme of educating the teeming millions of a country having continental proportions, the majority of whom inhabited the vast countryside and was engaged in farming. That is why he was prompted to say : "The idea is that we should have one teacher for twenty five boys, and you may have as many classes or schools of twenty five boys as you have teachers available, and have each of these schools specializing in separate craft—carpentry, smithy, tanning or shoe-making, Only you must bear in mind the fact that you develop the child's mind through each of these crafts. And I would emphasize one more thing. You must forget the cities and concentrate on villages. They are an ocean. The cities are a mere drop in the ocean."[6]

He did not minimize the literary aspect of education. He said it time and again that intellectual training and manual work should go hand in hand. However, he was of the view that the test for education would be like this : "The child at the age of 14, that is after finishing a seven year course, should be discharged as an earning unit."[7] In his scheme of education, primary education was equivalent to matriculation less English.[8] If the scheme had succeeded it would have encompassed higher education as well. In his own words : "I would revolutionize college education and relate it to national necessities."[9] He wanted that each industry should run its own institute for apprentices who after successfully undergoing the course would be absorbed in the industry itself.

Jamia Millia Islamia

Jamia Millia was born in 1920 as a consequence of *Khilafat* and Non-Cooperation movements. It was a revolt of a section of teachers and students who wanted to give a national turn to the pro-British policies of those who then managed the affairs of Aligarh Muslim University. Two prominent persons associated to *Jamia*, who developed the idea of Basic Education, were Gandhiji himself and Dr. Zakir Husain. During the time when Gandhiji was writing about Basic Education in the columns of *Harijan* in 1937, *Jamia* was gradually shifting from Qarol Bagh to its present location at Okhla. The institution was then headed by Dr. Zakir Husain who participated in the National Education Conference held at Wardha on October 22 and 23, 1937. The following resolutions were passed at the Conference :

(1) That in the opinion of this Conference free and compulsory education be provided for seven years on nationwide scale.

(2) That the medium of instruction be the mother tongue.

(3) That the Conference endorses the proposal made by Mahatma Gandhi that the process of education throughout this period should centre in some form of manual and productive work, and that all the other abilities to be developed or training to be given should, as far as possible, be integrally related to the central handicraft chosen with due regard to the environment of the child.

(4) That the Conference expects that this system of education be gradually able to cover the remuneration of the teachers.[10]

Zakir Husain Committee

Simultaneously a committee was appointed by the Conference to work out the details of the scheme of

Basic Education including the basic principles, objectives, training of teachers, supervision and examination, administration and the syllabus. The Committee was headed by Dr. Zakir Husain. Its members were : Khawaja Ghulam-us-Saiyidain, K.T. Shah, Vinoba Bhave, Kaka Kalelkar, Kishorlal Mashruwala, J.C. Kumarappa, Shrikrishnadas Jaju and Shrimati Asha Devi. Its convener was E.W. Aryanayakam. The Committee submitted its report in record time of one and a half months.

Zakir Husain Committee suggested five basic crafts including spinning and weaving, carpentry, agriculture, fruit and vegetable, gardening and leather work. It was, however, suggested that a craft other than these five crafts could be chosen by a school if local conditions so warranted. Spinning, weaving and agriculture held the position of primacy among all these crafts. An interesting suggestion made by the Committee was the daily distribution of time for various curricular activities.

The basic craft	3 hrs. 20 mts.
Music, drawing and arithmetic	40 mts.
The mother tongue	40 mts,
Social studies and general science	30 mts.
Physical training	10 mts.
Recess	10 mts.
Total time	5 hrs. 30 mts.

This distribution was made with spinning and weaving as the basic craft. The time was to be redistributed in case of other crafts.[11]

The Committee also suggested that the centres of correlation should be three i.e. the Physical environment, the Social environment and Craft work.[12] These three centres of correlation, according to the report, were intrinsically interconnected, and if curricular activities were woven round them, the syllabus would become a real means for adjustment to the environment.

Political Obstacles

In the beginning of 1937 elections were held for provincial legislative assemblies. The Congress was able to form ministries in seven and later on in eight provinces. The political conditions thus became favourable for the implementation of Basic Education on national level. But in October 1939 the Congress ministries resigned in protest against the arbitrary declaration by the British Government that India was at war with Germany and its allies. And so, the only opportunity to give a fair trial to Basic Education in pre-independence period was lost. Moreover, the national movement was gaining momentum during war years, and a serious educational experiment could hardly be undertaken in an atmosphere of increased political activities. However, in the closing years of the great war, Sir John Sargent in the Post-war Educational Development Plan, recommended Basic Education for Indian schools.

Non-Implementation in Jamia School

In the meantime *Jamia's* institutions had shifted from Qarol Bagh to Okhla. The *Madrasah-i-Ibtidai* was the first to start functioning in the changed locale, and then was started the *Ustadon ka Madrasah.* These two institutions were supposed to be the most concerned with Basic Education. But it is an enigma to this day why the syllabus prepared by Zakir Husain Committee was not implemented in toto in *Madrasah-i-Ibtidai* which was headed by Zakir Sahib himself. One of the reasons might be that the principles of mother tongue and manual work, which were so forcefully advocated by Mawlana Mohammad Ali and Hakim Ajmal Khan, were already in operation in *Jamia.* Wood craft, gardening, agriculture, spinning and weaving were, no doubt, there in the *Jamia.* But they were independent craft activities, and were hardly ever correlated to the knowledge part of the syllabus as in the case of the syllabus suggested by the Zakir Husain Committee.

Yet another reason for the non-implementation of the Basic syllabus might be the fact that a section of Muslim population had not taken kindly to the idea of Basic Education.[13] And *Jamia,* which was largely financed by public donations, could hardly afford opposition even from a section of the community. *Jamia's* policy of conciliation, which might have prevented the implementation of Basic Education, found its full expression on the occasion of its silver jubilee celebrations when leaders of both the Congress and the Muslim League were invited to attend its special function on November 17, 1946.[14]

Ustadon ka Madrasah

The case of *Ustadon ka Madrasah* was different from *Madrasah-i-Ibtidai.* The *Madrasah* was inaugurated on August 4, 1938 by K. Santanam in a rented building in Qarol Bagh with the explicit purpose of training teachers for Basic schools.[15] Following teachers were teaching various subjects in the *Madrasah* : Saeed Ansari taught General Principles of Education and Methods of Teaching, Dr. Zakir Husain taught Priciples of Basic Education, Prof. Mohammad Aqil taught Economy of Rural Life, Abdul Ghaffar Madholi taught Mother Tongue, Noor Mohammad was incharge of Spinning and Weaving and Abdul Hai looked after Wood craft and Cardboard craft.[16] The first course that the *Madrasah* offered was later on known as Diploma of Basic Training. The duration of the course was two years, and each student had to offer two of the listed crafts as a compulsory curricular requirement. The course is still there, and once when a teacher suggested to stop it, Principal Salamatullah remarked: "It is very easy to abandon a course but very difficult to establish it"-

But Basic education was finally abandoned in free India without realizing its full educational potential and its usefulness for an agrarian country like India. In the opinion of one of its chief architects, Dr. Zakir Husain, had it been given a fair trial it would have succeeded, because it was based on sound educational and psychological principles.[17]

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Indian-English Texts as English-Teaching Material

(Contd. from page 1)

developed and cultivated, would be quite exhaustive. It could draw upon the creative writing of any age in more than a dozen languages. A great advantage that can be squeezed out of the translation situation is by obliging the student, at all stages of his education, to carry out exercises in translation from his own language into English. This will be part of his English language learning. He is brought very close to the literary process itself, and an aspiring student of literature is bound to gain a lot from the practical experience of translation.

From the terminal years of school upto the first degree level, those doing compulsory English or opting for General English could be nourished on a wide variety of translated material—narrative fiction both short and long, lyric poetry and plays of reasonable length. At a later stage, it may also be possible to use verse translations of ancient and medieval narrative poems of manageable length. Thus, English translations of Indian writing can be used as an instrument to 'bring the distant near and make a brother of the stranger'.

Furthermore, in a country as old and large as India, literary material is the handiest means of learning something about the rest of the country, its time, its space and, above all, its cultural heritage. So, learning English through an Indian-English text, original or translation, provides general education to the student. No opportunity must be lost of using the classroom to widen the literary culture of our school and college-going youth and make them aware of the magnitude of our literary heritage.

Therefore, without seeking to subvert our firmly entrenched instruments for teaching English, we should start using Indian writing in English as an experimental alternative to British/American texts that have been our staple for so long. ☐

TEACHERS AS MEDIATORS

Onkar Nath Srivastava*

The policy perspective document entitled "Challenge of Education", 1985 contains the following excerpts which give us a glimpse of the present state of teacher education as also the vision of the future to which it can look forward.

"The world of tomorrow which would usher in an information-rich and technology-intensive society calls for new approaches to learning...."

"We are on the threshold of the development of new technologies likely to revolutionise teaching in classrooms. But unfortunately the process of updating the curricula of teacher education has been very slow. Much of the teacher education is irrelevant even to contemporary requirements, leave alone those of the future."

"While it is increasingly emphasised that education should become an instrument of national integration, cultural cohesion and development of humanitarian values, the trainees in teacher training institutions are not exposed to these ideas."

After the publication of the document "Challenge of Education" by the Government of India there followed a countrywide debate which culminated in the framing of the "New Education Policy, 1986". The latter forcefully declared that the system of teacher education would be overhauled. It added, "The new programmes of teacher education will emphasize continuing education and the need for teachers to meet the thrusts envisaged in this policy."

In moving from policy to strategy, from strategy to planning, and from planning to implementation, the teacher has to be kept in the centre of all activities. As such, adequate thought has to be given to the changes and measures which need to be incorporated in preservice and inservice training of teachers with a view to equipping, enabling and motivating them to play their proper role.

This focusses attention on the fundamental question of the role of teachers in any system of education. Despite the fact that all attempts, by and large, fail to fathom the essence of a teacher, convention has it that teacher's essential function is to transmit knowledge.

This leads us to a consideration of knowledge itself. It is common knowledge that a community takes some sort of a decision about certain kinds of knowledge and skills which it considers necessary to be maintained on a regular basis. As such, that knowledge and skills are sought to be transmitted from one generation to the next not in an informal manner but in an organised manner through formal education. Persons who possess the knowledge or skills in question are identified and are entrusted with the task of transmission. Professionally they are recognised as teachers.

This kind of thinking implies that knowledge is finite and unchanging. But real knowledge is in the nature of science. It is not finite and final but expanding and ever-changing. Since real knowledge is infinite and cannot be possessed, what one acquires as knowledge is only tentative and arbitrary and not absolute. New perceptions of the acquired knowledge continuously take place resulting in enlargement and enrichment. As such it does not carry much sense to describe the teacher as the source and store of a stock of knowledge. He can lay no claim to a monopoly of knowledge. With others he realises that knowledge is all around us and that it is overwhelming in its diversity. What distinguishes him as a teacher is his capability and experience to negotiate with the vast mass of varied knowledge on the basis of his specific abilities, his capacity to do serious thinking and make judgements, and his profound vision, comprehension and perception of life. He is in essence a negotiator—a mediator.

Even for a common man knowledge is greatly important for it constitutes the basis of his survival in any environment, let alone the part it plays in the achievement of progress and success in life by being used as a means of gaining power. For survival everybody needs to extract from the sea of information all-around, that information which is of significance and relevance and that which can be assimilated. In other words, one has in the first instance to learn to

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**Ex-Jt. Director, Higher Education, U.P.*
B-295, Chandrashekhar Azad Nagar,
Mehdauri Colony, Teliarganj, Allahabad-211004.

discern the relevant from the irrelevant information supplied through all the senses. He has then to select and acquire them so as to enrich his perceptions with a view to taking the kind of decisions which would favour his own survival and success in the particular environment, of course, in consonance with the collective well-being. The role of education and that of the teacher is to help people learn all this; do all this.

The rapid changes which make the environment more and more unstable presently, the terrific pace at which knowledge is vastly increasing currently and the profound way in which the society is being affected by all these developments including democratization of education, vigorously shake the notion of a full time teacher as an individual who possesses a fixed stock of knowledge of a kind deemed useful. The emerging problems of codification of knowledge accompanied by a trend towards dissolution of the boundaries of separate disciplines, the meaninglessness of the "possessing" of knowledge and the enormous difficulty in grasping, let alone assimilating, the flood of specialized and technical information so very valuable even to a common citizen, make the role of the teacher enormously perplexing. Often he languishes in his perplexity when he finds that much of the information is fragmented, partial and occasionally inaccurate.

A very convenient and most often adopted way of dealing with such a situation is wherein new packages of unbaked knowledge are prepared for delivery to students in the same old way and more specific assignments are given to the teacher. All this the latter does more or less in a mechanical manner. Can he help this ?

The broad aim of education does not change; but the strategy which is adopted to achieve it must be adapted to changing circumstances. What is exactly required is the realisation that the role of teacher needs a big change. His role now has to be that of a mediator in the encounter between the individual and the mass of all kinds of information from all sources. Conveying knowledge accurately, clearly and effectively will no doubt continue to be the core of his functionality. But the latter will have to go far beyond the transmission of knowledge.

Since education is poised between the forces of continuity and change more emphasis has to be put on learning than on teaching. Teacher must also remain a learner. He himself has to learn how knowledge can be sought, validated, assimilated and used as a basis for further learning. As he will share all this with those whom he is supposed to teach he will have to underline that to live in the present age is to be always learning. As such, more than a source of knowledge the teacher is a guide to sources, an organiser of opportunities and a demonstrator, in the teaching of inquiry and thought. According to Torsten Husen, the focus will be shifted to "the economic management of the teaching function."

Now the crucial question is, "Are we preparing teachers through preservice training to function in this role ?" largely No. The second question is, "Are we remedying and redeeming teacher education through inservice education so as to enable the teacher to cope with the new complexity of his role ?" Again No. The next question is, What can be done in the present circumstances ? A few suggestions given here may be of some significance.

Firstly, since a large number of teachers in the primary, secondary and tertiary sectors are performing the function of teaching without having undergone any teacher preparation what-so-ever, they have to be made to pass through the requisite suitable training.

Secondly, inservice training should be considered as a key part in professionalisation and therefore developed into a well organised and compulsory system. Recently in the Indian Year Book on Teacher Education (1989) while Prof. Kundu dwelling on the importance of inservice education has urged the need to concentrate and consolidate this training so much so that he has advocated the elimination of initial training and has put a plea for the closure of all the present day training colleges and institutions, Prof. D.D. Tiwari, Ex-Vice Chancellor, Kanpur University has taken a critical view of the trend of centralization and Governmentalization in the context of National Educational Policy.

Prof. Kundu's suggestion of altogether doing away with initial training is indeed, among other issues, an important debatable question which needs to be widely considered at as many fora as possible in the country.

In the meantime the inservice segment in the form of continuing teacher education be strengthened, promoted and concentrated for this is the point where teacher preparation is most effective. It will be desirable to ensure that an interaction between initial training and inservice training is always there.

It may be remarked that experience of teaching is essential for the teacher to acquire an emotional and personal perspective which is necessary for developing the acumen, insight and expertise in dealing with the new complexity of teachers' role.

Thirdly, proper attention should be given to at least the following three areas of the curriculum which would go a long way in enabling the teacher to play his new role as a mediator and redeem teacher education appreciably despite the problem of numbers :

(*i*) *Philosophy and Sociology of Education*

These areas do figure in the syllabus of teacher education, for philosophical and social dimensions are indeed among the most important. But more important than mere acquainting with the different philosophies of education is the bringing home of the realisation that the study of philosophy and having a tangible philosophy of life are of great practical value. Adaval (1987) writing the Foreword to "Teachers Education in Eastern U.P.", by Pathak observed "This (Philosophy of Teachers Education) will have to be inconsonance with the philosophy of education and ultimately with the philosophy of life which guides and shapes our destiny."

As regards the social dimension of education, it may be stressed that all activities in the field of education should be directed towards, and should repeatedly harp on the theme of making contribution to the creation and formation of a new man, a more just society and a new social order. This has been dealt at length in the celebrated work "Learning to be" by Faure, E. et al (UNESCO 1972) and emphasised at the 35th Session of the International Conference of Education 1975 to which repeated references are being made till this day.

(*ii*) *Educational Psychology*

In order that teachers may begin to see themselves more clearly as agents of change alongside other change agents, they have to understand the way in which people at various ages and in various stages of development learn and perceive the world around them. They need also to appreciate the way in which these perceptions are affected by cultural and social difference and by individual difference. This requires some suitable approach besides new topics to be incorporated in this area of the curriculum. The objective is to develop in the students the security of a stable self-image, a perception of individual worth leading to his personal growth, and the strengthening of his confidence in his own capabilities. In this connection importance of dialogue may be stressed.

(*iii*) *Educational Technology*

This should form more or less a new area in the curriculum of teacher education. It lays stress on the way of knowing as to where particular resources of knowledge and skill are located, how to get access to them, and how to acquire the ability to use various media of communication available. It has to be borne in mind that modern communication technology is already there in the learning situation which makes the learners of our times to some extent different from learners of previous generation simply because they are so much exposed to mass media. As such there is the need to exploit on the one hand the technology in education by making increasing use of equipments in the teaching-learning situation and on the other, the technology of education by resorting to better methods and approaches so as to improve the effectiveness of learning. Educational technology has to be geared around the idea that in the scheme of things wherein the teacher has to function in the new role of a mediator, selection and use of knowledge is more important than its absorption. The concomitant idea is that in the current age of democratization of education the schools should not merely serve the elite but be reorganised to offer everybody the possibility of self improvement. This has revolutionary implications for the role of the teacher. □

TO OUR READERS

Knowledgeable and perceptive as they are our, contributors must not necessarily be allowed to have the last word. It is for you, the readers, to join issues with them. Our columns are as much open to you as to our contributors. Your communications should, however, be brief and to the point.

Manager ! Want to Motivate Without Spending A Penny ?

V. Narasimhan*

"Yes, I have heard of
"Motivate for success";
But without a penny,
How ? How ? Johnny"

Want to know ?
I shall tell you;
If you are sincere,
In listening, learning
And in approach too—
Subsequent to
Learning it through.

1. Whom are you motivating ?
Individuals.
Then,
They are 'the important' :
Recognise that they are important, and
Their individuality too !
Recall each one is anatomically separate, and
Psychologically too !; And
Each one
Craves for
Individual attention;
And prays for individual care.
Based on craved satisfaction,
Nurtured in each individual mind,
Give them not a universal medicamentation
Valid for the whole of mankind,
But give them
What is valid for the individual kind.

2. If individuals are important
Make them feel they are important.
Praise in public
And criticise (if you must) in private;
They are as important
As that important work they do.

3. One cannot suddenly order
The disorder.
But can guide the disorder
To order.
They, why shoot that
Piercing darts
Of shouted orders ?
Why not planned
Well-coordinated orders ?

4. You as a good soul
May feel you are no soul or no body
In a world of powerful bodies.
But, remember
You are an honourable member of the
Organisation
And
Everyone near you in the organisation
Watches you
To emulate you;
So play up, the
Positive side of you.

5. Show confidence in them
To instil confidence in them.
This forgotten
Makes the system rotten.

6. Be a good listener
More than being a good speaker.
While listening
The speaker may see
The error of his own opinion
Saving himself of your hasty reflection
Remember
Good listening
Provides better 'understanding'
That for which
We pine for,
Before and after.

7. Watch 'how' you say, more than
'What' you say
When communicating—
To your subordinates, and
Super ordinates.

8. Encourage participation
Force not manipulation.
Keep them informed than warned
To make them feel 'warm'
In full-blooded action.

9. Perestroika
And not
Secretiveness
Shall be your philosophy.
Induce group cohesiveness
Instead of promoting isolating aloofness.

10. Integrate the objectives;
Your subordinates' goal
And your goal
Should merge
To make
Your wage-earning partners
"Want to do things" (with love)
That
You want them to do
(With or without you wearing the boxing glove)

Said ten simple steps
Will give you and others lot of pep
Neither money
Nor cola is required
But only will.
But will you ?

**Registrar, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum-695011.*

OPPORTUNITIES AT ASRC IN 1990

American Studies Research Centre
HYDERABAD 500 007 INDIA

AWARDS IN AMERICAN STUDIES

Twice a year the Centre considers applications, on a competitive basis, for a limited number of grants to member teachers and scholars for resident study and research. Awards fall into three categories :

(1) The **Teacher Research Grant** supports basic research in American History, literature or social issues at the ASRC. Benefits are : (a) one round-trip second-class railfare from the grantee's home to Hyderabad; provided that the period of the grant exceeds 20 days; and (c) a per diem of Rs. 45 for each day at the Centre. Such grants are awarded for periods of three to eight weeks.

(2) The **Teacher Study Grant** supports young scholars or teachers who wish to come to the Centre to read intensively on some aspect of American literature, society or history, either in preparation for research at the doctoral level or to strengthen teaching about US related subjects. Teacher Study Grants provide the same benefits as Teacher Research Grants.

(3) **Middle Awards** support scholars who have had their Ph.Ds. for five years or more and have demonstrated evidence of continuing scholarly activity. Benefits are : (a) one round-trip first-class railfair from the grantee's home to Hyderabad, provided that the grant period exceeds 20 days; (b) travel allowance of Rs. 45 per diem calculated to the nearest quarter-day; and (c) a per diem of Rs 50 for each day spent at the Centre.

Deadlines for applications each year are 15 February for summer grants and 15 July for winter grants.

Besides these awards, the ASRC brings several senior scholars in a variety of disciplines to the Centre each year as **Scholars-in-Residence**, both to pursue their own advanced research and to counsel Teacher Study and Teacher Research grantees. The Scholar-in-Residence Award is by invitation only.

Grants-in-Aid to successful doctoral/M.Phil/M.Litt candidates in American literature, history or society, who supply the ASRC with a copy of their work for inclusion in the Centre's library collection, help defray part of the costs incurred in the preparation of dissertations or theses (copying. typing, etc). Such a grant, which never exceeds Rs. 200 for M. Phil/M. Litt. theses and Rs. 300 for Ph.D. dissertations, cannot be used to pay any fee charged by the candidate's institution. There is no deadline for Grants-in-Aid applications.

SIXTH COURSE ON AMERICAN CIVILIZATION

30 JULY—26 AUGUST 1990

The ASRC will offer a four-week survey course on American Civilization for the benefit of Junior scholars of American Studies. The content of this course is roughly equivalent to the pre-doctoral programme given in some Indian Universities. It provides an interdisciplinary survey of American history, society, thought, literature, politics, and institutions from the colonial period to the present day. The course is taught by experienced faculty, both South Asian and American.

Participants in the course are required to write tetm papers on selected topics, to prepare bibliographies as part of their training in research methodology, and to take written and oral tests. Grades are given at the end of the course based on cumulative performance in various examinations. A certificate is given to each successful participant. Several prizes are awarded for outstanding performances in the course.

The aim of this interdisciplinary course is convene scholars from several disciplines under the broad rubric of American Studies so that each discipline illuminates the others while several disciplines together contribute to a well-grounded understanding of the richness and complexity of American Civilization.

Persons teaching American subjects in colleges and universities and scholars registered or planning to register for MPhil/PhD degrees in the Humanities, History, Literature or the Social Sciences in South Asian Universities are eligible to apply for particpaition in the Course. ASRC provides food and accommodation (double occupacy basis) at its hostel, but candidates selected for the course are expected to finance their own travel to Hyderabad. Those without institutional grants or fellowships may apply for travel assistance from ASRC. Maximum enrolment is limited to 25 participants.

Application forms are sent on request. Applications for the American Civilization Course VI must reach the Centre by 15 June, 1990.

Dr. J.W. Bjorkman
DIRECTOR

The Right Word is 'Learning'

Hon'ble Prof. D.P. Chattopadhyaya, Governor of Rajasthan, delivered the Convocation Address at the Annual Convocation of the Banasthali Vidyapith. Prof. Chattopadhyaya observed, "The connotation of the word 'education' is that one gives this and the other takes it. But the right word, to my mind, is 'learning'. In the process of learning one need not always depend on the teacher. One can learn from Nature, from one's own society and tradition, and mostly from one's own experience. Self-learning is the highest form of learning, the consummation of education." Excerpts

Convocation

Education is inseparable from culture. Culture or *Krsti* comes from the root word *Kars*. Without culture nothing worthwhile is achievable. Though the earth, air, water, and sun are all gifts of Nature, the cultivator cannot produce his golden harvest without cultivation, *karsan*. In a sense the student, *siksarthi*, is in the role of a *krsak*, cultivator. Unless he cultivates what is given to him or her by Nature he or she cannot attain the best in him or her. Therefore the true enquirer can learn right from Nature, reading the book of Nature itself. Nature does not keep her secrets enclosed only within herself but these are available also within us, in our own body, *deha prakrti*. *Deha* (body) is itself partly *Prakrti*, natural, and partly psychic or spiritual. Both the psychologist and the medical practitioner keep on reminding us of our composite psycho somatic being. Without a good body we cannot have a good soul within it. Body is ensouled. Soul is embodied. The dichotomy of body and soul is false. The dichotomy of materialism and spiritualism is equally untenable. The civilisation which follows the exclusive spiritual path, disregarding its material base, gradually withers away. The civilisation which follows only the materialist path, forgetting the spiritual soul and its needs, is destined to perish. What happens to civilisation also happens to the human being. One-sided emphasis on spiritual values or material values is erroneous and therefore self-defeating.

This is the basic truth we learn from the four-fold values, *dharma*, *artha*, *kama*, and *moksa*, as defended by the ancient seers of India. It is to be noted that they have emphasised not only *dharma* and *moksa* but also drawn our attention to the importance of *kama*, the life of senses, and *artha*, the economic life in its widest sense. In the pursuit of four-fold values or virtues of life we cannot be truly spiritualist without a material base and materialist without spiritual aspirations.

The same lesson we have from Mahatma Gandhi. It is to be noted that he not only asked the learner to develop the qualities of head. His concern with the qualities of heart and hand was equally deep. An ideal student must not be purely intellectual. He must have loving and other emotional qualities within him. He must have matching respect for manual labour. Total development of personality of the learner is what Mahatmaji used to speak of all the time.

It is interesting to note that both Gurudev Tagore and Mahatma Gandhi, the two great Indian contemporaries, were tireless in their emphasis on integrating the needs of head and heart in evolving an ideal system of education. The institutions which they set up laid equal emphasis on theoretical and practical aspects of life. This balanced view of life makes a learner a real asset to the society he belongs to. Otherwise our education alienates us from the larger world of life and makes us irrelevant to it.

Degree or diploma is not merely a job voucher. Millions are unemployed today with prestigious diplomas and degrees to their credit. But what they need most is the ability to understand the needs of the society and the ability to fulfil those needs. Our education, all said and done, primarily orients students to job-seeking and not self-shaping and self-reliance. Thrown in the job markets after the formal completion of their education, they do not know how to cope up with the cruel and competitive market forces. Suddenly they realise the relative futility of the degrees and diplomas they have obtained after hard work. This sense of despondency has to be removed from their budding minds. A sense of confidence has to be instilled in them. What they need is learning and not education as ordinarily understood. The connotation of the word 'education' is that one gives this and the other takes it. But the right word, to my mind, is 'learning'. In the process of learning one need not always depend on the teacher. One can learn from Nature, from one's own society and tradition, and mostly from one's own experience. Self-learning is the highest form of learning, the consummation of education.

The masters of mankind like the Buddha, Christ and Mohammad are all *self-taught*. They learnt their lessons from life and not from classroom. Simply because the days have changed we need not think that the basic truths of life have undergone radical change. Even today we had amongst us Tagore and Gandhi who did not care for University degrees. Degrees may be necessary but certainly not sufficient for making us truly human. Our Graduates and Masters are often without jobs and even fragrance of culture, while the genius of Gandhi and that of Tagore could bring about a fundamental change not only in our social life but also in the filed of education. By merely aping the western models of education we cannot hope to cater to the needs of the society of India today. We have to explore for our own solutions to the problems facing us.

My words about standard education and degrees must not be taken in a pessimistic way. I like to impress upon you the imperatives of inner excellence and self-reliance. If the leaders of the teaching community and those of the employers, public and private, can jointly evolve some reliable criteria for determining the educational and cultural excellence of the students, mechanical reliance on degrees may be considerably reduced. To avoid arbitrariness some sort of certification, *pramana-patra*, is certainly necessary, but that should be formulated and given with utmost care and perception. □

VC's KILLING SHOCKS ACADEMIA

ALL SECTIONS OF THIS UNIVERSITY SHOCKED AT
GRUESOME KILLING OF PROFESSOR MUSHIRUL HAQ
AND HIS SECRETARY BY EXTREMISTS STOP
KINDLY CONVEY OUR HEARTFELT CONDOLENCES AND
SYMPATHIES TO THE BEREAVED FAMILY

J B GANGULY
VICE-CHANCELLOR
TRIPURA UNIVERSITY

DEEPLY SHOCKED AT THE NEWS OF
BRUTAL MURDER OF VICE-CHANCELLOR OF UNIVERSITY OF
KASHMIR (.) I CONDEMN THE INCIDENT (.) SUCH AN INCIDENT IS
AGAINST ALL NORMS OF CIVILIZED SOCIETY (.) PLEASE SEEK
ASSURANCE FROM THE GOVT. THAT CULPRITS WILL BE PUNISHED AND
SUCH ACT WILL NOT REPEAT

VICE-CHANCELLOR
NORTH BENGAL UNIVERSITY

KILLING OF VICE-CHANCELLOR AND SECRETARY CONDEMNED (.)
CONDOLENCE TO BEREAVED FAMILIES TO BE CONVEYED

MOHAN THAMPI
VICE CHANCELLOR
KERALA UNIVERSITY

College as Resource Centre

A two-day workshop on "College as a Knowledge Resource Centre for Community—The Third Dimension of Higher Education" was organised at S.D. College, Muzaffarnagar in collaboration with the National Institute of Educational Planning and Administration (NIEPA), New Delhi on 6th and 7th April, 1990.

Explaining the purpose and objectives of the workshop, Dr. L.N. Mittal, Principal, S.D. College emphasized the need for the diffusion of knowledge to solve the community problems. He was of the opinion that without the concerted efforts on the part of educated class it will not be possible to remove illiteracy and other social evils in the country.

Professor Satya Bhushan, Director, NIEPA, in his inaugural address pointed out the strategy for diffusion of knowledge for the welfare of society. He suggested that S.D. College could act as a knowledge resource centre for extension education to community. Extension Education, he said, had been accepted as the third dimension of higher education by the UGC. After independence, Govt. of India had floated several schemes for the promotion of knowledge and its application for the solution of problems of the community. It was a sad state of affair that real benefit of knowledge and education could not reach the downtrodden and the poor masses and consequently social and economic disparities occurred in different sections of the society. Unemployment, malnutrition, environmental pollution, poverty and communal disharmony were spreading and the very fabric of Indian society was at stake. He explained in great detail social engineering and knowledge as power. From an industrial society we are to build an information sharing society, he added.

Professor, G.D. Sharma, Head of Higher Education Unit, NIEPA, highlighted the role of higher education institutions in the manpower development. Dr. Pramila Menon, also of NIEPA, spoke on the work conducted by the institute in Gurgaon district of Haryana State.

The participants discussed the problems like soil degradation, women's health, their education; environmental pollution, malnutrition, filthy living conditions, unemployment and poverty in various parts of the country. It was stressed to awaken the society particularly the rural masses towards solving their problems.

The participants were divided into five sub-groups for discussions on various problems and to prepare the project proposals for community development. First group discussed the problems of women's empowerment, population education, child care, health and education. Second group worked on environmental education, non-conventional sources of energy and soil testing. Third group discussed drug abuse, legal literacy, and adult education. Fourth group took up communal harmony and fifth group deliberated on the unemployment, poverty and rural development.

The workshop was attended by about 70 participants including 4 principals, 40 lecturers and incharges of NSS, NCC, Women's Studies Cell, Girls Guiding, Adult Education and Nehru Yuva Kendra in Colleges.

Professor Satya Bhushan, Director, Professor G.D Sharma and Dr. Pramila Menon were the resource persons on behalf of NIEPA. Dr. B.N.L. Bansal acted as convenor.

Centre for Protein Studies

A Centre for Protein Engineering and Biomedical Research (PROMED) is being set up at the Voluntary Health Services (VHS), Adyar, with funding by the Department of Biotechnology, Government of India. It will conduct basic studies on producing stable proteins by chemical modifications. Possibilities also exist of cloning proteins with structures not available in nature, according to Dr. P.V. Sundaram, Director of the centre.

Dr. Sundaram said that the Department of Biotechnology had sanctioned Rs. 1 crore for this project, which was the first such centre in India, for a five-year period. A major portion of this amount would be utilised for importing equipment worth Rs. 65 lakhs. A well equipped library would be started at a cost of Rs. 5 lakhs and the remaining amount would be utilised for recurring charges.

Dr. Sundaram said the results of the studies done at the centre, which is expected to become functional in October, should yield methods and processes for applications in diagnostics, routine analysis in clinical chemistry, environmental monitoring and effluent control, in immunology, in the production of organic compounds, in food technology and in biosensor development. The centre would also interact with laboratories in Sweden and with the National Institute of Standards and Technology, Washington, U.S.

VIII Plan Allocation for AP Varsities

The University Grants Commission will grant Rs. 8 crores as its share for various developmental schemes for sciences and humanities in eight universities in Andhra Pradesh during Eighth Plan. The UGC has adopted a new pattern of sharing Eighth Plan grants with the State Government. Prof. G.J.V. Jagannadha Raju, Chairman, Andhra Pradesh State Council of Higher Education (APSCHE) is reported to have disclosed this after discussions with Prof. S.K. Khanna, Secretary, University Grants Commission, over the guidelines to formulate proposals for developmental schemes.

The proposals will be discussed with the Vice-Chancellors, senior academics, State Government representatives and Chairman of SCHE and UGC experts from May 15 to 17.

According to Prof. Raju, the 8-crore grant was exclusively meant for sciences and humanities and does not include engineering, technology and postgraduates centres, open university and JNTU, which would be considered separately.

For the first time, the UGC will consider schemes such as campus development, roads development and civic amenities in the universities.

The UGC will also share fully for library building and women's hostel project under the institutional development schemes. Earlier, it used to share 50 per cent with similar percentage from the State Government. The UGC also approved earmarking upto ten per cent of the grant towards maintenance of equipment.

The universities would be allowed to incur expenditure with effect from April 1 on all schemes approved during the Seventh Plan for which the grants have already been released out of the unspent balances available with them.

Issues in English Language Teaching

"Issues in ELT" was the theme of a 2-day Seminar held recently at the English Language Teaching Centre, Vikram University, Ujjain. Inaugurating the seminar Dr. K.K. Kemkar, Ex-Vice-Chancellor of the University and former head of School of Studies in English, emphasised the role that language teaching plays in harmonious development of personality by first enabling him to express his emotions, then directing him to control them and enriching the cultural refinement.

Dr. S.K. Chauhan, Vice-Chancellor, urged not only the students of arts but of all disciplines to acquire competence in English as it ensured their professional growth.

The following suggestions were made at the seminar :

(a) To delay revival of "Grammer Translation Method" would be further detrimental to the cause.

(b) Textbook production should be entrusted to practising teachers who have direct link with student population.

(c) Cultural impediment of textbooks can be minimised by utilising excerpts from Indo-Anglican writing.

(d) Newspapers/magazines/ comics telecasts should also be exploited for teaching.

(e) CDC syllabus proposed by the UGC should NOT be introduced without adequate preparation. There is no need to rush it without examining the academic / financial / administrative implications.

Workshop at Nalanda Open University

As a follow up of the National Seminar on the basic tenets of Open University System, the Nalanda Open University organised an Orientation Workshop for Coordinators and Part-time teachers of its proposed Study-Centres. Inauguarating the Workshop Dr. Kumar Bimal, Vice-Chancellor, Nalanda Open University, said that the problem of higher education should not be assessed only in the terms of per capita G.N.P. and the literacy level. This functional-technical theory of education was not relevant to India. Quoting a report submitted by UNCTAD, Dr. Bimal said that in the guise of educational assistance developed countries were exploiting the skilled manpower of the developing countries through brain drain and immigration. He opined that to widen the scope of higher education promotion of distance education through Open University system was quite imperative. To balance our present day social tension, to enable our new generation in upward social mobility and to inculcate in them communicative ability, it was the demand of the Zeitgeist to expand the frontiers of higher education.

The papers presented and discussed at the workshop included (i) Psycho-Social Aspects of Distance Teaching; (ii) Important Facets of Distance Education; (iii) Lesson writing, correspondence courses and the working pattern of distance education; and (iv) Counsellor and counselling : The Mainstay of Open University.

Degree Course in Naturopathy and Yogic Sciences

Shri D.M. College of Naturopathy & Yogic Sciences, Ujire (Karnataka), offers a 5-year degree course in Naturopathy and Yogic Sciences (B.N.Y.S.)—4 years+1 year Internship. Run by the D.M. Educational Society, the college is affiliated to the Mangalore University.

Minimum qualification for admission to this course is 10+2 (P.U.C. or Intermediate Science) with minimum of 50% marks in Physics, Chemistry and Biology collectively. Students who are keen in Natural, Yogic and simple way of life with aptitudes for Natural remedies are only selected for admission.

The college is attached to the 25-bedded Shri D.M. Yoga-Nature Cure Hospital, Dharamasthala, for clinical studies.

Admission to the next batch starts in May-June,1990. Further details can be obtained from the Principal, Shri D.M. College of Naturopathy & Yogic Sciences, Ujire-574 240 (Dakshina Kannada, Karnataka).

Hydrocarbon Deposits of North East India

A regional symposium on "Hydrocarbon Deposits of North East India" was held under the auspices of the All Assam Geological Forum, Gauhati University Unit, recently. The objective of the symposium was to discuss the geology, technology and pollution problems involving hydrocarbons and the future of the hydrocarbon based industries for the development of North East.

The seminar was inaugurated by Dr. Debo Prasad Barooah, Vice-Chancellor. In his address Dr. Barooah said that suitable exploration and exploitation techniques should be used for the development of India.

Shri Rothindranath Goswami, General Secretary, explained the aims and objectives of the forum and its activities during the last 10 years. He sought the cooperation of the different organisations in making the Department of Geological Sciences into a fulfledged Institute of Geology.

The deliberations of the seminar were held in five sessions and the topics discussed included (i) Geology and Hydrocarbon Deposits in NE India; (ii) Production Mechanism and Enhanced Oil Recovery Processes and Hydrocarbon based Industries in NE India; and (iii) Environmental Pollution in NE India.

The symposium was attended by delegates from different colleges and Universities, ONGC, OIL, CIL (NEC), GSI, CGWB, DGM, AMDC and PRL.

Deprivational Environment and Psychological Services

An all India seminar on "Deprivational Environment and Psychological Services" was organised by the Department of Psychology of the Gorakhpur University on April 5, 1990. Inaugurating the seminar Prof. (Mrs.) Pratima Asthana, Vice-Chancellor of the Gorakhpur University said that knowledge of psychology should be gainfully applied to the people in general and the inhabitants of deprivational environment in particular. Psychology must aim at solving the personality problems of people arising out of deprivational environment, she said and exhorted the expert and scholars in the field to define thrust areas in this specific field. They should draft a concrete action plan based upon new strategies and accelerated motivation. This would, she felt, go a long way in making psychology a very useful branch of learning dedicated to the science of humanity at large.

In his presidential address

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications are invited from Indian citizens for the post of Production Assistant in the pay scale of Rs. 1400-2600 (initially against leave vacancy for one year but likely to continue) in the prescribed form available on payment of Rs. 2/- from the office of the Association. Essential Qualification : Bachelor's degree from recognised University or Higher Secondary with diploma in Printing Technology. Experience: At least five year's in Printing/Production of Books etc. in a reputed concern or autonomous organisation. Desirable : Proficiency in English Proof Reading. Candidate with Diploma in Book Production will be preferred.

The post carries usual allowances admissible to AIU employees generally at Government of India rates. Last date of receipt of application is **11.5.1990.**

Prof. Durganand Sinha said that despite the fact that deprivation and poverty were the most pressing problems in the country, the people here had become immune to them. These problems had not drawn the attention of the psychologists also, he lamented.

SIAA Scholarships

The Society of Indian Academics in America (SIAA) is offering six postgraduate scholarships of Rs. 300 P.M. for one year to needy and deserving students : one each in medicine, science, sociology, engineering, arts, and Sanskrit. Please send to Professor Rishi S. Raj, President of S.I.A.A., 86 Wortendyke Avenue, Emerson, N.J. 07630 U.S.A. with a one page description of need, one page of vita giving personal data and qualifications, and one recommendation letter from the Department Head. The last date for applying is August 15, 1990.

Haq Memorial Lecture

The University Grants Commission (UGC) is reported to have decided to institute a Mushir-ul-Haq Memorial Lecture every year in honour of the slain scholar.

The memorial lecture will be held in the field of comparative religion and culture, alternately at the Jamia Millia Islamia, New Delhi and the University of Kashmir, Srinagar.

News from UGC

INSAT-1B Programme of UGC

Between 8th May to 15th May, 1990 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 12 Noon to 1.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

6.00 a.m. to 7.00 a.m.

8.5.90

"Filtration—A Laboratory Aid—II"

"Media in Formal & Non-Formal Education"

9.5.90

No Telecast

10.5.90

"Graphics with Microcomputers—IV : Graphic Programming"

"Deccan Traps—Archives of Ancient Volcanism"

"Let's Be Polite"

11.5.90

"A Date With Maths—II"

"A Little More Consideration, A Little More Thought"

"What on Earth Are We Doing to Our Water ?"

12.5.90

"Spectators in a Peasant Land—I"

"Basic Legal Features of a Company"

"Facing the Interview"

13.5.90

No Telecast

14.5.90

"Classical Mechanics—XIII : Rigid Bodies—Dynamics"

"Understanding Systems"

"Bajra : An Important Crop of Arid Zone"

15.5.90

"Panel Discussion on Industrial and Technological Application of Carbohydrates"

"Science and Technology and the Universities"

"Blood Transfusion and AIDS"

2nd Transmission

12.00 Noon to 1.00 p.m.

8.5.90

"Plasma Emission Spectroscopy & Metallic Pollutants—I"

"Values in Education—II : The Practice"

"Red Eye"

9.5.90

No Telecast

10.5.90

"One World One Language—II : Talk to the World"

"Folklore"

"Appreciation of Literary Forms—II : The Novel"

11.5.90

"Recent Trends in Astronomy & Astrophysics"

"Defence Mechanism—VII"

"Effects of Environmental Pollutants on Brain Functions"

12.5.90

"Science of Cooking Eggs"

"Writing a Resume"

"Name of the Game is Basket Ball"

13.5.90

No Telecast

14.5.90

"Photoelectric Effect—III"

"Management Functions and Behaviour—Organisation Structure"

"Your Ocean and Mine"

15.5.90

"Plasma Emission Spectroscopy and Metallic Pollutants—II"

"Values in Education—III : Reaching Out"

"New Channels of the Heart"

Teachers' Deputation to NLM

The University Grants Commission (UGC) has agreed to a proposal of the Government of India for the deputation of 100 teachers from Universities/Colleges for a period of two years on wholetime basis for the nationwide literacy movement launched by Bharat Gyan Vigyan Samithi (BGVS)—a voluntary agency.

The Commission would reimburse the salary of substitutes for such teachers on the same basis as under the Scheme of the Faculty Improvement Programme. The teachers on deputation to BGVS will be allowed full salary and allowances from their parent institutions as if they continue to work there.

The Commission has also advised the universities to allow teachers to work with the State Resource Centres set up under the Adult Education Programme on usual terms and conditions of deputation. More recently, the Commission has desired that the entire university system should involve itself in the task of National Literacy Mission (NLM).

National Lectureships Abolished

The University Grants Commission has decided to discontinue the scheme of National Lectureship from the Eighth Plan. Initiated in 1970, the scheme envisaged utilisation of the services of outstanding teachers and research workers in the university system for promoting academic standards. Since its inception, National Lectureships have been awarded to over 750 teachers from various universities and colleges.

The discontinuance of the scheme has been necessitated as it is found overlapping with several other faculty improvement schemes of similar nature concurrently under operation by the Commission in the university system including National Fellowships, Visiting Professors, Visiting Fellows, Visiting Associateships, and Career Awards.

News from Agril Varsities

Hybrid Research at HAU

The Indian Council of Agricultural Research (ICAR) has sanctioned Rs. 50.5 lakhs to Haryana Agricultural University (HAU) for hybrid research on rapeseed-mustard, cotton and rice. This was disclosed by Dr. Amrit Lal Chaudhary, Vice-Chancellor of the University at a meeting held recently to take stock of the progress made by the university in terms of generation of agro-production and protection technologies for achieving the target set before HAU by the Technology Mission on Oilseeds. Haryana Agricultural University was given nine mandates by the Technology Mission on oilseeds production in 1986. Out of nine, the university scientists have already achieved the target of seven mandates well before the time frame.

The university has recently released many high yielding varieties of oilseeds viz. toria, variety TH 68 (early and high yielding), mustard varieties, RH 8113 (high yielding and tolerant to alternaria and white rust diseases) and RH 781 (high yielding and frost tolerant). These new developments are expected to help in further increasing and stabilizing the production of rapeseed-mustard in the state.

The Vice-Chancellor advised the extension workers of the University as well as the State Department of Agriculture to communicate the newly developed technologies to farmers so that they could derive benefits from them.

Kisan Rath

Shri Devi Lal, Deputy Prime Minister and Union Minister for Agriculture flagged off '*Kisan Rath*' at Haryana Agricultural University on April 14, 1990. This will provide a unique facility to the visiting farmers to take them round the research farm and laboratories of the university to familiarise them with the day-to-day new techniques evolved by the university experts for their betterment.

Addressing the farmers he lauded the excellent research work being done by the university in the field of agriculture, animal science, home science and other allied areas for increasing the agriculture and livestock production of the country in general and the state in particular. He exhorted the farmers to avail of these unique facilities. Ch. Devi Lal also asked the university scientists to evolve low cost techniques which could be adopted by the farmers of different areas with different climatic conditions.

Speaking on the occasion, Dr. A.L. Chaudhry, Vice-Chancellor, HAU gave an account of the extension set up of the university which has been created for the benefit of the farmers of Haryana and adjoining state.

News from Abroad

Microprocessor System to Solve Millions of Equations Every Second

Dr. Tom Kazmierski, a scientist at Griffith University, in Queensland, Australia, has designed a micro-processor system which can solve millions of equations every second.

Multiprocessing is a recent development which works on the principle that many minds are better than one. It uses a linked network of computers to solve more problems faster.

Microprocessing is aimed at handling microelectronic circuit simulation, a task which ties up thousands of hours of computer time for firms which manufacture silicon chips. These tests are necessary because they allow a proposed circuit to be test run before the expensive process of transferring it to the chip.

But the circuits are so complex, and the number of equations needed to test them so vast, that computers spend hours in the process. Corporate computer giant IBM has about 30 per cent of its global computer power tied up in circuit tests.

This is where microprocessors come in.

Dr. Kazmierski estimates his new system will be able to work 100 times faster than a typical computer such as the standard workhorse vax 11-750. This is made possible by linked RISC processors, which are the system's calculating tools.

The processors have the capacity to handle 60 M Flops, or 60 million floating point operations per second. They are connected by transputers which can calculate in their own right, but are ussd only as communication links for RISC processors in Dr Kazmierski's system.

The more processors and transputers in the system the greater its calculating ability. However, as the number in a system grows, the processors spend more time 'talking' to each other to exchange information.

Students and researchers at Griffith University are looking for the number of processors which provide the maximum in calculations with the minimum in conversation.

Communication

Clashing Dates

Sir,

Thapar Institute of Engineering and Technology, Patiala has announced 30th and 31st May, 1990 as the dates for the Common Entrance Test 1990 for admission to the Bachelor of Engineering and the Bachelor of Architecture Courses offered by various institutions in Punjab and the Union Territory of Chandigarh. This is in direct clash with the same dates (30th and 31st May, 1990) announced by the Directorate General of Shipping, Ministry of Surface Transport, Govt. of India for their Common Entrance Examination for admission to Training Ship Rajendra and the Directorate of Marine Engineering Training, Calcutta. The clash of dates threatens to jeopardise the chances of thousands of candidates who want to avail of the maximum opportunities and compete in both the examinations. As the Directorate General of Shipping has already revised its dates it will only be proper that the Thapar Institute of Engineering and Technology either prepones or postpones its Common Entrance Test 1990 by a couple of days. By doing so the Institute will earn the gratitude of thousands of candidates who aspire to be on its rolls and would not like to miss the other opportunity if they are not successful here.

Yours etc.
Lt. Genl. K.S. Gill (Retd.)
Principal,
Mata Jai Kaur Public School, Delhi

We Congratulate . . .

Prof. Ashin Das Gupta who has been appointed Vice-Chancellor of the Visva Bharati.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be Contacted
April 30, 1990	Workshop on Water Pollution Contral	To project the activities of the Research Centre in Environmental Engineering and to have an interaction with various organisations for effective contral of water pollution.	Thapar Institute of Engineering & Technology, Patiala.	Dr. C.B. Kukreja, Prof. & Head, Department of Civil Engineering, Thapar Institute of Engineering & Technology, Fatiala-147001.
May 29-June 1, 1990	The 11th Annual Conference of the Canadian Applied Mathematics Society	To promote exchange of technical and scientific advances made in (i) Mechanics of Ocean Waves, (ii) Mathematical Modelling; and (iii) Computational Fluid Dynamics	Technical University of Nova Scotia, Nova Scotia, Canada.	Ms. Mary Meldell, Conference Co-ordinator, Continuing Education Division, Technical University of Nova Scotia, P.O. Box 1000, Halifax, Nova Scotia B 3J 2 X 4 Canada.
June 22-23, 1990	National Seminar on Maintenance Management & Human Resource Development	A forum for a meaningful interaction among engineering institutions, government departments, industrial sectors and individuals involved with the problems of maintenance engineering and related human resource requirements in rapidly changing technological age.	Indian Society for Technical Education, West Bengal Section, Calcutta.	Prof. A.K. Ghosh, Hon. Secretary-cum-Treasurer, West Bengal Section, Indian Society for Technical Education, Block FC, Sector III, Salt Lake City, Calcutta-700091
July 16-27. 1990	Intensive Training Programme on Abstracting and Indexing	To prepare participants to provide abstracting and indexing service to their clientele and to give an overview of information technology applications in information storage and retrieval.	Small Enterprises, National Documentation Centre, NISIET, Hyderabad.	The Registrar, National Institute of Small Industry Extension Training (NISIET), Yousufguda, Hyderabad-500 045.
Sept. 25-26, 1990	Regional Conference on Interactive Communication in Distance Education	To explore the possibilities of using modern technology to extend interactive communication in distance education and to increase the effectiveness of conventional technologies available in distance education in Asia.	Asian Association of Open Universities, Jakarata, Indonesia.	Mr. Setijadi, Universitas Terbuka. J1, Cabe Raya, Ciputat, 15418, Indonesia.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. **Arora, Rekha.** *The development of the self from phenomenology to existentialism.* Delhi.
2. **Patel, Parmanand.** *Hathyog, udgam, vikas aur vartman samasyaon ke paripreksha mein hathyogik prakriyaon ka sambhavya sthan.* HS Gour. Dr. K.S. Joshi, F/305, Ramyanagri, Bibwewadi, Pune.

Religion

1. **Das, Manvendra Kishore.** *Political philosophy of Buddhism as depicted in the Jatakas and their commentaries.* Delhi.
2. **Shukla, Kunj Behari Lal.** *A comparative study of Abhidhammatha Sangaho and Abhidharama Kosa.* Delhi.

Language & Literature

English

1. **Acherjee, Satya Gopal.** *A study of certain modern elements in Hardy's major novels.* Gauhati. Dr. H.N. Gohain, Prof. and Head, Department of English, Gauhati University, Guwahati.
2. **Kalaithasan, N.** *Kamala Das : A critical study.* Madurai.
3. **Lall, Ranjana.** *Image of women in Anita Desai's novels.* Gauhati. Dr. H.N. Gohain, Prof., and Head, Department of English, Gauhati University, Guwahati.
4. **Manjula, C.R.** *Swamy Vivekananda : Literary study.* Nagarjuna. Prof. D.V.K. Raghavacharyulu, Research Director, Department of English, Nagarjuna University, Nagarjunanagar.
5. **Nadkarni, Sundar Vithal.** *Alienation and commitment in modern Indo-English poetry with special reference to the poetry of three poets : Nissim Ezekiet, R. Parthasarathy and A.K. Ramanujan.* Patel. Dr. S.B. Minajagi, Ex-Head, Department of English, N.A. & T.V. Patel Arts College, Vallabh Vidyanagar.
6. **Palamittam Raja.** *Historical consciousness in the Anglo-Indian novels with special reference to Paul Scott's Raj Ouartet 1976* IIT, Madras. Dr. A.V. Krishna Rao, Prof., Department of Humanities and Social Sciences, Indian Institute of Technology, Madras.
7. **Radhey Shyam.** *D.H. Lawrence and Agyeya as novelists : A comparative study.* Delhi.
8. **Samal, Manas Ranjan.** *A study of realism and naturalism in the novels of Theodore Dreiser.* HS Gour. Dr. (Mrs.) S. Sivaraman, Reader, Department of English, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

Sanskrit

1. **Agarwal, Rajni.** *Doctor Rudradev Tripathi : Vyaktitva evam krititva.* Devi Ahilya. Dr. B D. Musalgaonkar, Govt. Sanskrit College, Indore.

2. Chande, Pankaj Trimbak. *Dr. Shri Bha Varne kranchya Sanskrit sahitya rachna : Ek adhyayan.* Nagpur. Dr. K.R Joshi, Department of Sanskrit, Nagpur University, Nagpur.

3. Gurmukh Singh. *A study of advaita in yoga vasistha.* Panjab.

4. Mahapatra, Sachidananda. *Concept of Jatavedas in vedic literature.* Kurukshetra.

5. Mahapatra, Gouri Das. *A study of Srikrisna Bhatta and his Ishwaravilasa Mahakavya.* Delhi.

6. Sadhukhan, Sanjit Kumar. *Uddyatakara's refutation of the Buddhists.* Calcutta.

7. Shukla, Narajan Chandrashankar. *Jaimini Sutramekamadhyanam, D. Litt.* Baroda.

8. Subrahmanya Sarma, C.V.S. *Ajnana dhwanta candabhaskarasya pathasameekshatmaka samadanam.* RSS.

Pali

1. Rout, Swapna. *Avadana sahitye samajcitra.* Calcutta.

Punjabi

1. Devinder Kaur. *Dr. Attar Singh dee sahit alochana : Ek mulyankan.* Punjabi. Late Dr. Ravinder Singh Ravi.

2. Goel, Krishan Lal. *Sant Namdev ate Sant Ravi Dass dee vani da tulnatmak adhyayan.* Panjab.

3. Surjit Kaur. *Punjabi lok geetan da samaj shastri adhyayan.* Kurukshetra.

Hindi

1. Anand Prakash. *Hindi kahaniyon mein yugchetana, 1960-75.* Osmania.

2. Chachondia Vandana Jyotiswarup. *Nirala ke katha sahitya mein abhivyakt samajdarshan aur charitra sristhi ka anusheelan.* Nagpur. Dr. M.M. Kadu, Post Graduate Department of Hindi, Nagpur University, Nagpur.

3. Daya Shankar. *Kabir aur Tulsi ke kavya kee antarvastu aur rupapaksh ka tulnatmak anusheelan.* Patel. Dr. Shivkumar Mishra, Prof. and Head, Department of Hindi, Sardar Patel University, Vallabh Vidyanagar.

4. Gill, Harnake Singh. *Adhunik Hindi kavita mein vichar kee bhoomika, 1950-1975.* Delhi.

5. Jagdip Singh. *Allegorical depicting in nirgun kavya.* Jammu. Dr. Janak Gupta, Reader, Department of Hindi, University of Jammu, Jammu.

6. Manchanda, Suman Bala. *Rangeya Raghav ka katha sahitya : Samvedna aur shilpa.* Delhi.

7. Puranik, Savitri. *Shri Laxmiprasad 'Rama' ke vyaktitva evam krititva ka anusheelan.* HS Gour. Dr. S S. Dubey, Head, Department of Hindi, Govt. Degree College, Hatta.

8. Santhi, C. *Adhunik Hindi kavita mein kavya chintan : Gaveshanatmak adhyayan, chhayavad se nayi kavita tak.* CUST. Dr. P V. Vijayan, Prof., Department of Hindi, Cochin University of Science and Technology, Cochin.

9. Sarabjeet Singh. *Sathottari kahani mein sangharash chetna.* Panjab.

10. Shandilya, Mahesh Chandra. *Korku-bhasha sahitya evam sanskriti.* HS Gour. Dr. H.K. Dutta, Principal, Govt. K.M V., Raisen.

11. Sharma, Nand Kishore. *Swatantrayottar natya kavyon mein mithak tatva.* Kurukshetra.

12 Sharma, Vidya. *Jaishankar Prasad ke katha-sahitya mein samajik manav mulya.* Panjab.

Bengali

1. Chattopadhyay, Bimal Chandra. *Uttarbanger bhawaiya O chatkagan : Sankalan O sameeksha.* Calcutta.

2. Mandal, Ramkrishna. *Rabindra Nath Tagore's essays on literature : Pathbhed, collection and analysis.* Visva-Bharati. Dr. Amitrasudan Bhattacharya, Department of Bengali, Visva Bharati, Santiniketan.

3. Sengupta, Subhas Chandra. *Narayan Gangopadhyay as short story writer : Evaluation and a critical study.* NBU.

Marathi

1. Lenjewar, Lata Dilip. *Vahadi bhasheteel loksahityacha chikitsak abhyas.* Nagpur. Dr. (Smt.) Malti Patil, Institute of Arts and Social Sciences, Nagpur.

Persian

1. Zahid Ali. *A critical study of Malfuz literature in Persian Sultanate period.* Delhi.

Kannada

1. Dastagirisar, Abdul Azeemsab Allibai. *Kannadadalli Moharam padagalu : Ondu adhyayan.* Karnatak. Dr. B.V. Mallapur, Reader, Institute of Kannada Studies, Karnatak University, Dharwad.

Geography

1. Joshi, R.C. *Quantitative geomorphic analysis of Kotadum, Kumaun Himalaya.* Kumaun. Dr. D S. Jalal.

2. Rai, Har Govind. *Urban growth trends and patterns of urban development in Madhya Pradesh.* HS Gour. Dr. D.S. Srivastava. Reader, Department of Geography, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

3. Sharma, Arun. *Impact of community development block on rural development : A comparative study of Chakai (Bihar) and Dimoria (Assam) blocks.* Gauhati. Prof. M. Borthakur, Ex-Prof., Department of Geography, Gauhati University, Guwahati.

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1. Chakraborti, Sambuddha. *Unabingsha shatabdite Bengali bhadra-mahila.* Calcutta.

2. Hemalatha, Bothapudi. *Life in Medieval Northern Andhra, based on inscriptions from the temples of Mukhalingam, Srikurmom and Simhachalam.* Andhra.

3. Lyngdoh, M.P.R. *The festivals in the history and culture of the Khasi.* NEHU. Prof. J.B Bhattacharjee, Department of History, North-Eastern Hill University, Shillong.

4. Rai, Chandra Shekhar. *India and Mauritius : A survey of mutual cooperation between these two countries and their bilateral relations in between, 1947-1977.* Magadh.

5. Shetty, Sadanand Ramakrishna. *Banavasi through the ages.* Karnatak. Dr B K. Gururaja Rao, Prof., Department of Ancient Indian History and Archaeology, University of Mysore, Manasagangotri, Mysore.

6. Tanwar, Raghuvendra. *The Unionist Party in Panjab, 1923-1947.* Kurukshetra.

7. Veerabhadra Rao, Mamidanna Rama Surya. *The temples of Panchadharala and Elamanchili.* Andhra

UNIVERSITY OF HYDERABAD

(Central University established Under an Act of Parliament)

P.O. CENTRAL UNIVERSITY, HYDERABAD-500 134

ADMISSION ANNOUNCEMENT 1990-91

The University will hold entrance examinations from 25th June to 3rd July, 1990 for admission to M.A., M.Sc., M.P.A., M.F.A. courses (4 semesters); P.G. Diploma courses (2 semesters); M.C.A. course (6 semesters): M.Phil (2 semesters); M.Tech. course (3 semesters) and Ph.D. programmes as detailed below :

1. School of Humanities

(i) M.A , M.Phil and Ph.D. in English, Philosophy, Hindi, Telugu, Urdu and Applied Linguistics (ii) M.Phil. and Ph D. in Comparative Literature.

2. School of Social Sciences

M.A., M.Phil and Ph.D. in Economics, History, Political Science, Sociology, Anthropology; and (ii) M.Phil and Ph.D. in Regional Studies.

3. School of Mathematics & Computer/Information Sciences

(a) Mathematics

M.Sc., M.Phil and Ph.D. in Mathematics, Applied Mathematics, Statistics—Operations Research.

(b) Computer/Information Sciences

(i) Master of Computer Applications (MCA), (ii) P.G. Diploma in Computer Applications (DCA), (iii) M.Tech. in Computer Science/Artificial Intelligence and Robotics, (iv) Ph.D. in Computer/Information Sciences.

4. School of Physics

(i) M.Sc. Physics (ii) M.Phil in Physics, Material Science, Modern Optics/Laser Physics, (iii) Ph.D. Physics.

5. School of Chemistry

(i) M.Sc. Chemistry, M.Phil in Chemistry, M.Phil. Chemistry with Specialization in Chemical Education (preferably for inservice candidates), (ii) Ph.D. in Chemistry.

6. School of Life Sciences

(i) M.Sc. in Life Sciences (Biochemistry, Plant Sciences, Animal Sciences) (ii) M.Phil; and (iii) Ph.D.

7. Sarojini Naidu School of Performing Arts, Fine Arts and Communication

(i) Master's Degree in Performing Arts (Dance); (ii) Master's Degree in Performing Arts (Theatre Arts); (iii) Master's degree in Fine Arts (Painting); (iv) M.A. in Communication (Audio-Visual Media); (v) P.G. Diploma in Acting (evening course) (vi) Ph.D. in Performing Arts (Dance and Theatre Arts).

ENTRANCE EXAMINATIONS

Admissions are made on all-India basis in order of merit taking into consideration the past academic record and performance of the candidates at written/oral tests as preseribed in the Prospectus 1990-91.

(i) for M.A., M.Sc , M.C.A , D.C.A., M.F.A., M.P.A. & P.G. Diploma in Acting

The written examinations will be held between 25th June and 29th June 1990 at BANGALORE, BHUBANESWAR, CALCUTTA, COCHIN, DELHI, HYDERABAD, MADRAS, PUNE, TIRUPATI, VIJAYAWADA AND WALTAIR. The University reserves the right to cancel any of these Centres, if the total number of eligible candidates is less than 100 at that centre.

(ii) for M. Tech., M.Phil and Ph.D. Programmes

The written examinations and interviews will be held only at HYDERABAD between 30th June and 3rd July, 1990. Candidates attending the tests for these programmes will be eligible for reimbursement of II Class Railway fare as per rules detailed in the Prospectus 1990-91.

RESERVATION OF SEATS

In each course 15% and 7.5% of the seats are reserved for SC and ST candidates respectively with a provision for interchangeability wherever necessary. Relaxation in the minimum percentage of marks required for admissions is also provided. In each course, 3% of the seats are reserved for Physically handicapped candidates. Weightage of 3% out of the total of 100 maximum marks will be given for Sports' excellence. For admission of foreign students, please refer to the relevant provisions in the Prospectus.

ELIGIBILITY

Detailed information regarding minimum qualifications and other requirements for various courses is given in the Prospectus 1990-91.

Candidates who have graduated under the 10+2+3 system of education alone are eligible to apply. Candidates who have graudated under 10+2+2 system of education are eligible to apply only if they have successfully completed one year bridge course as per UGC guidelines.

Candidates whose results of the qualifying degree examination are awaited and also those who are due to appear for the final examination of the qualifying degree before the dates of Entrance Examinations are also eligible. They must, however, submit the results of the final examination not later than 31st August, 1990, failing which provisional admission, if granted will automatically stand cancelled.

HOW TO APPLY

Copies of the Prospectus 1990-91 containing detailed instructions, eligibility criteria for admission to each course/programme and Application Forms can be obtained :

(i) IN PERSON, from 25.4.1990 onwards either from the Academic Section, Administration Building in the University Campus, Gachibowli, Hyderabad 500 134 or from "The Golden Threshold" premises at Nampally Station Road, Hyderabad 500 001, against cash payment of Rs. 10/- for the first set of one Application Form and Prospectus and Rs. 4/- for each additional Application Form.

(ii) BY POST, from the Deputy Registrar (Academic & Examinations), University of Hyderabad, Central University P.O., Hyderabad 500 134, by sending (a) Requisition, (b) One self-addressed slip, (c) crossed Demand Draft for Rs. 12/- drawn in favour of the Registrar, University of Hyderabad, on State Bank of India or on Andhra Bank or any Nationalised Bank at Hyderabad for the first set of one Application Form and Prospectus and Rs. 4/- for each additional Application Form.

Note : A separate application is required for each course. However, for the following courses one application for each set of courses as mentioned below is sufficient.

(i) M.Sc. Mathematics (Applied Mathematics, Mathematics, Statistics-OR); (ii) M.Sc. Life Sciences (Bio-Chemistry, Plant Sciences, Animal Sciences; (iii) M.C.A. and D.C.A.; (iv) M.Tech (Computer Science, Artificial Intelligence and Robotics); (v) M.Phil Mathematics (Applied Mathematics, Mathematics, Statistics—OR); (vi) M.Phil in Physics, Material Science, Modern Optics/Laser Physics); (vii) M.Phil in Chemistry/Chemical Education;

Financial Assistance may be Available (for details refer to Prospectus 1990-91).

Last Date for receiving request for application by Post : 04.05.1990

Last Date for receiving completed applications: 14.05.1990

The University will not be responsible for any postal delay.

Hyderabad
April 10, 1990

P. Muralikrishna
REGISTRAR

GURU GHASIDAS UNIVERSITY, BILASPUR, MP

ADVERTISEMENT

No : 1190 : Esstt : UTD : 90

Dated : 16/4/90

Applications on the prescribed form (in seven copies) are invited from eligible candidates for the following posts so as to reach the undersigned on or before 16th May, 1990, viz.

S. No.	Name of the Post	Subject	No. of Post		Pay Scale
1.	**Professor (TWO)**	English	1	Rs.	4500-7300
		Forestry	1		-do-
2.	**Reader (Two)**	English	1	Rs.	3700-5700
		Computer Science	1		-do-
3.	**Lecturer (FOUR)**	English	1	Rs.	2200-4000
		Computer Science	2		-do-
		Forestry	1		-do-
4.	**Project Officer (ONE) (Upto 31.3.1991)**	Adult Continuing & Ext. Education	1		-do-
5.	**Technical Asstt. (TWO)**	Computer Science	2	Rs.	550-900 (UGC)

The qualifications prescribed for the above posts are as under :

For Professor : An eminent outstanding scholar in the subject having secured atleast 55% at the Post-Graduate Examination and atleast 50% Marks in Graduate Examination with the subject applied for, from a recognised University, which published work of high standard and should be actively engaged in research the subject. Should possess atleast Ten Years Experience of teaching the subject of which five years should be as Reader or in an equivalent position together with experience of guiding research at Doctoral level. Should have experience of teaching M.Phil. Classes.

For Reader :
1. Master's Degree in the subject with atleast 55% Marks and with atleast 50% Marks in Graduate Examination with the subject applied for from a recognised University.
2. A Doctoral Degree/M. Phil. in the Subject.
3. Five years experience of teaching UG/PG Classes having atleast three years to these as University Lecturer or in an equivalent position.

For Lecturer :
1. Master's Degree in the subject with atleast 55% Marks together with atleast 50% Marks in Graduate Examination with the subject applied for from a recognised University.
2. A Doctoral Degree/M. Phil. in the subject.

For Project Officer :
1. Master's Degree in Arts/Social Science with atleast 55% Marks together with 50% Marks in Graduate Examination from a recognised University.
2. A Doctoral Degree/M. Phil. in the Faculty of Arts/Social Science.

For Technical Asstt : M.Sc. Degree in Computer Science/Physics/Mathematics with atleast Second Class together one year experience in Computer Technique.

OR

B.Sc. Degree in Computer Science/Physics/Mathematics with atleast 50% Marks together with three years experience preferably Post-Graduate Diploma in Computer Science equivalent to PG Diploma Course in Computer Science Prescribed by the Department of Electronics.

Application forms can be obtained from the University office on payment of Rs. 10.00 or by making a written request by post to the Registrar, accompanied by a crossed postal order of Rs. 16.00, drawn in favour of the "Registrar, Guru Ghasidas University, Bilaspur, M.P." with self-addressed envelope (10"x5").

Incomplete applications, applications not on the prescribed form, and application not having advertised qualification will be rejected.

All appointments will normally be on two years probation. The age of superannuation as also, the allowance and benefits of pension, gratuity, provident fund will be admissible under the rules in force from time to time.

Applicants who are in employment in Government/Semi-Government/Organisation/Educational Institute or of any Govt. undertaking must send their applications through proper channel, but advance copy should reach the University in time. No applicant shall be permitted to face the interview or shall be considered without "NO OBJECTION CERTIFICATE" of the Department concerned.

No TA/DA will be admissible to the candidate if called for interview.

The Selection Committee may investigate the merits of the candidates in absentia. Only eligible candidates may be called for interview.

The University reserves the right to fill up or not to fill up any post advertised.

The candidates will have to produce the original documents relating to age, qualifications, experience, at the time of interview.

Canvassing in any form by or on behalf of the candidate will disqualify.

Knowledge of Hindi will be desirable for all the posts. Candidates who had applied for any of the posts, with reference to earlier advertisement(s) **Shall also apply**.

P.B. Trivedi
REGISTRAR

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto 15th June, 1990 for the post of Director at the Council's Centre for Research in Medical Entomology, Madurai.

The Centre has been set up with the major objective of monitoring JE Vectors and their bionomics. The Centre has done some pioneering work in investigating easily warning systems for prediction of impending JE epidemics and bio-environmental control of JE vectors.

Qualifications & Experience : Essential : (a) MBBS or 1st class M.Sc. in Zoology/Entomology; and (b) Doctorate in Microbiology/Pathology/Zoology or Entomology or Allied subjects, (c) 15 years research/teaching experience in relation to vector borne diseases and vector control strategies.

Desirable : Administrative experience in running of Centre/Unit/Division.

Job Requirements : This is a top level research management post. The Director will have the overall responsibility of managing the Centre and ensuring that creative, innovative research studies are undertaken in the identified priority areas. Manpower development and interacting with and assisting the local health authorities in tackling vector bome diseases prevalent in the area are two other major job responsibilities.

Salary/Conditions of Service : The scale of pay attached to the post is Rs. 5900-200-6700 plus allowances as per Central Govt. Rules and N.P.A. of Rs. 950/- p.m. for medical graduates only. Higher initial pay can also be considered. Free medical aid and leave travel concession are also permissible for the employee and his family as per Govt. rules.

Age : Below 50 years. SC/ST candidates allowed relaxation in accordance with Govt. of India Rules.

Educational qualifications relaxable in the case of candidates otherwise well qualified. Benefits of pension admissible. Private practice is not allowed. However, non-practising allowance is admissible to medical graduates only as per rules of the Council. Application forms can be obtained from the office of the Director General, **Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi-110029** to whom the complete application form should be sent accompanied with crossed postal order for **Rs.** 8/- (No fee for SC/ST candidates) made out in the name of the Director General, ICMR, New Delhi. Applications without postal order will not be entertained.

Candidates called for interview will be paid 1st class rail fare by the shortest route. No. TA/DA is admissible for joining the post or on termination of appointment. Application from the employees working under the Central/State Govt./Semi-Govt. and Govt. controlled undertakings should be sent through the employers and be received before the closing date alongwith the certificate that the applicant will be relieved within three months of receipt of appointment orders. Advance copies will be considered subject to the proviso that the certificate will be produced at the time of personal discussion. Applications received after the closing date will not be considered. At the time of interview they should produce "No Objection Certificate" from their employer.

Incomplete application will not be entertained.

UNIVERSITY GRANTS COMMISSION

ACADEMIC STAFF COLLEGES—SCHEDULE OF ORIENTATION PROGRAMMES AND REFRESHER COURSES DURING 1990-91

The University Grants Commission has approved 48 Universities to set up Academic Staff Colleges to provide facilities for orientation of Lecturers with upto eight years continuous service in Universities and Colleges. The Commission has also identified about 150 University Departments/Institutions for organising subject-oriented refresher courses in Science, Humanities and Social Science during 1990-91 for in service teachers with more than 5 years of continuous service. While 85-90 per cent of teachers will be enrolled from the catchment area at the notified Centres. 10-15 per cent of teachers will be from any University or College on an all India basis. Teachers selected for the course are to be treated as on duty with fully pay and allowances by the sponsoring University/College. The host Institution will provide free lodging to outstation participants and TA will be paid to them as per ASC rules.

The schedule of refresher courses/orientation programmes during 1990-91 as received from the Universities is indicated below :

REFRESHER COURSES

S. No.	Subject	Name of the University/ Institution	Proposed schedule during 1990-91	Catchment Area (Region)
1	2	3	4	5
1.	Chemistry	Madras University, Madras	02-05-90 to 31-05-90 11-06-90 to 10-07-90 25-07-90 to 22-08-90 27-08-90 to 25-09-90 21-01-91 to 29-02-91	South (T.N., Kerala)
2.	-do-	Punjab University Chandigarh.	16-04-90 to 05-05-90	North (except Delhi)
3.	-do-	NEHU, Shillong	09-05-90 to 30-05-90 05-09-90 to 26-09-90	East (Assam, NE States)
4.	-do-	Burdwan University, Burdwan.	04-05-90 to 25-05-90 September-October 1990	East (West Bengal)
5.	-do-	Poona University Pune.	07-05-90 to 01-06-90 03-06-90 to 29-06-90 03-07-90 to 30-07-90	West
6.	-do-	Delhi University, Delhi.	17-05-90 to 06-06-90 19-05-90 to 08-06-90 18-06-90 to 09-07-90 24-09-90 to 14-10-90 14-12-90 to 03-01-91	North (Delhi) Central
7.	Bio-Chemistry	Delhi University, Delhi.	24-09-90 to 15-10-90 19-12-90 to 08-01-91	All India
8.	Physics	Poona University, Pune.	30-04-90 to 26-05-90 06-08-90 to 01-09-90 12-11-90 to 08-12-90 21-01-91 to 16-02-91	West (Maharashtra, Goa)
9.	-do-	Devi Ahilya University Indore.	28-05-90 to 24-06-90 04-06-90 to 24-06-90 08-06-90 to 27-06-90 17-09-90 to 05-10-90 24-09-90 to 13-10-90	Central (M.P.)
10.	-do-	S.V. University, Tirupati.	July, 1990 October, 1990 January, 1991	South (T.N. Andhra Pradesh)
11.	-do-	Mysore University, Mysore.	23-04-90 to 12-05-90 14-05-90 to 02-06-90 04-06-90 to 23-06-90 25-06-90 to 14-07-90 12-11-90 to 01-12-90	South (Karnataka, Kerala)
12.	-do-	Rajasthan University, Jaipur.	30-04-90 to 19-05-90 21-05-90 to 19-06-90 16-07-90 to 04-08-90 07-08-90 to 27-08-90	Central Rajasthan)
13	Botany	Patna University, Patna.	16-04-90 to 05-05-90 09-07-90 to 28-07-90 20-08-90 to 08-09-90 14-01-91 to 02-02-91 05-03-91 to 23-03-91	East (Bihar, Assam, N E. States)
14.	-do-	Lucknow University, Lucknow.	24-09-90 to 15-10-90 01-01-91 to 28-01-90	North

15.	Botany	Bharathidasan University, Tiruchirapalli.	15-06-90 to 12-07-90 01-08-90 to 29-08-90 12-09-90 to 10-10-90 01-11-90 to 28-11-90 19-01-91 to 15-02-91	South (T.N., Andhra Pradesh)
16.	-do-	Jodhpur University, Jodhpur.	11-06-90 to 30-06-90 24-09-90 to 13-10-90	Central/West
17.	Zoology	M.K. University, Madurai.	02-07-90 to 23-07-90 07-10-90 to 28-10-90 05-11-90 to 26-11-90 07-12-90 to 28-12-90 07-01-91 to 28-01-91	South
18.	-do-	Marathwara University, Aurangabad.	11-06-90 to 06-07-90 09-07-90 to 03-08-90 06-08-90 to 31-08-90 03-12-90 to 28-12-90 04-02-91 to 02-03-91 04-03-91 to 30-03-91	West (Maharashtra, Goa)/Central (M.P.)
19.	-do-	N.E.H.U. Shillong.	05-04-90 to 26-04-90 02-08-90 to 23-08-90 07-11-90 to 28-11-90	East
20.	-do-	Gujarat University, Ahmedabad.	25-06-90 to 14-07-90	West (Gujarat)/Central (Rajasthan)
21.	Mathematics	Rani Durgavati University, Jabalpur	01-05-90 to 21-05-90 05-06-90 to 25-06-90 03-10-90 to 23-10-90 08-01-91 to 28-01-91 03-02-91 to 23-02-91	Central
22.	-do-	Punjab University, Chandigarh,	02-04-90 to 21-04-90	North
23.	-do-	B.H.U. Varanasi.	December-January, 1991	East
24.	-do-	Madras University, Madras.	23-04-90 to 23-05-90 05-07-90 to 02-08-90 30-08-90 to 27-09-90 08-10-90 to 06-11-90 20-02-91 to 21-03-91	South
25.	Statistics	Gujarat University, Ahmedabad.	04-06-90 to 24-06-90	West/North/Central
26.	Geology/Geophysics	Osmania University Hyderabad.	05-07-90 to 28-07-90 05-11-90 to 30-11-90 03-12-90 to 24-12-90	South
27.	-do-	Panjab University, Chandigarh.	25-05-90 to 02-06-90	North
28.	Geology, Geophysics	Dr. H.S. Gour University Sagar.	16-07-90 to 04-08-90 22-10-90 to 10-11-90 04-02-91 to 23-02-91	West/Central
29.	-do-	I.S.M. Dhanbad.	05-11-90 to 25-11-90 04-02-91 to 23-02-91	East
30.	Earth Science	Bharathidasan University Tiruchy.	01-06-90 to 28-06-90 09-08-90 to 05-09-90 04-10-90 to 31-10-90 03-01-91 to 30-01-91 01-03-91 to 28-03-91	All India
31.	Anthropology	Ranchi University, Ranchi.	03-09-90 to 23-09-90 January, 1991.	All India
32.	Life Science	Calicut University	July, 1990 October, 1990 December. 1990 February. 1991	South/East
33.	-do-	G.N.D. University, Amritsar.	25-06-90 to 14-07-90 24-12-90 to 12-01-91 04-03-91 to 23-03-91	North/Central/West
34.	Home Science	Avinashalingam Instt. of Home Science and Higher Education for Women, Coimbatore.	16-07-90 to 05-08-90 21-08-90 to 10-09-90 22-10-90 to 11-11-90 15-11-90 to 05-12-90	South
35.	-do-	B.H.U. Mahila College, Varanasi.	November, 1990	East
36.	Computer Application	Rani Durgawati University Jabalpur.	06-07-90 to 26-07-90 05-08-90 to 25-08-90 03-09-90 to 23-09-90 05-11-90 to 25-11-90 04-03-91 to 24-03-91	Central/North/West
37.	-do-	Bharathiar Univ., Coimbatore	25-04-09 to 15-05-90 30-05-90 to 19-06-90 16-08-90 to 05-09-90 24-10-90 to 13-11-90 18-12-90 to 09-01-91	South/East
38.	Economics	Delhi University, Delhi.	05-04-90 to 25-04-90 15-10-90 to 05-11-90	North (Except U.P.)
39.	-do-	S.V. University, Tirupati.	August, 1990 November, 1990 February, 1991)	South (T.N., Kerala)
40.	-do-	J.N. University, New Delhi.	20-08-90 to 14-09-90 28-01-91 to 22-02-91	Central/North (U.P.)

41.	Economics	Andhra University Waltair.	10-04-90 to 06-05-90 01-10-90 to 27-10-90	South (Andhra, Karnataka)
42.	-do-	Gokhale Instt. of Economics & Politics, Poona.	16-04-90 to 04-05-90 07-05-90 to 25-05-90 18-06-90 to 06-07-90 24-12-90 to 11-01-91	West (Gujarat, Goa)
43.	Sociology	Gorakhpur University, Gorakhpur,	April, 1990 July, 1990 October, 1990 December, 1990 January, 1991	East
44.	-do-	Mysore University, Mysore.	June, 1990 November-December 1990 May, 1990' July, 1990 January, 1991	South
45.	-do-	Jodhpur University, Jodhpur.	04-06-90 to 23-06-90 02-07-90 to 21-07-90	West/ Central/ North
46.	Social Work	T.I.S.S. Bombay	12-04-90 to 05-05-90 15-07-90 to 04-08-90 22-10-90 to 12-11-90 01-01-91 to 22-01-91 11-02-91 to 10-03-91	West/East
47.	-do-	Andhra University, Waltair.	18-01-91 to 16-02-91	South
48.	-do-	J.M.I. New Delhi	07-05-90 to 29-05-90 20-08-90 to 10-09-90	North/ Central
49.	History	Patna University, Patna.	24-04-90 to 14-05-90 21-05-90 to 09-06-90 30-07-90 to 18-08-90 05-11-90 to 24-11-90 21-01-91 to 09-02-91	East
50.	-do-	Goa University, Goa	26-07-90 to 14-08-90 15-10-90 to 03-11-90 07-01-91 to 26-01-91	West
51.	-do-	Bharathiar Univ., Coimbatore.	02-05-90 to 22-05-90 20-06-90 to 10-07-90 29-08-90 to 18-09-90 07-11-90 to 27-11-90 14-12-90 to 03-01-91	South (T.N., Andhra)
52.	-do-	A.M.U., Aligarh.	23-07-90 to 24-08-90 28-08-90 to 25-9-90 12-11-90 to 08-12-90 14-01-91 to 10-02-91 11-03-91 to 06-04-91	North
53.	-do-	Devi Ahilya Univ., Indore.	07-05-90 to 03-06-90 11-06-90 to 08-07-90 09-07-90 to 05-08-90 01-10-90 to 28-10-90 03-12-90 to 30-12-90	Central
54.	Philosophy	Pondicherry University, Pondicherry.	06-07-90 to 02-08-90 31-10-90 to 27-11-90 20-02-91 to 19-03-91	South (T.N., Kerala)
55.	-do-	Andhra Univ., Waltair	25-05-90 to 21-06-90	South (Andhra. Karnataka)
56.	Library Science	Osmania University, Hyderabad.	04-04-90 to 28-04-90 02-05-90 to 26-05-90 03-09-90 to 26-09-90 04-02-91 to 28-02-91	South
57.	-do-	A.M. University, Aligarh.	23-07-90 to 24-08-90 12-11-90 to 08-12-90 11-03-91 to 06-04-91	North/ Central
58.	-do-	N.E.H. University, Shillong.	10-10-90 to 31-10-90	East
59.	-do-	S.N.D.T. Women's University, Bombay.	04-06-90 to 30-06-90 29-10-90 to 29-11-90 07-01-91 to 02-02-91	West
60.	Commerce	Rajasthan Univ., Jaipur.	25-06-90 to 14-07-90 16-07-90 to 04-08-90 17-09-90 to 06-10-90 26-11-90 to 15-12-90 31-12-90 to 19-01-91 04-02-91 to 25-02-91 11-03-91 to 30-03-91	Central (Rajasthan)
61.	-do-	Pondicherry Univ., Pondicherry.	05-07-90 to 01-08-90 20-08-90 to 15-09-90 10-10-90 to 06-11-90 13-12-90 to 09-01-91 14-02-91 to 13-03-91	South
62.	-do-	Dr. H.S. Gour Univ., Sagar.	16-07-90 to 04-08-90 22-10-90 to 10-11-90 07-01-91 to 26-01-91 04-02-91 to 23-02-91 11-03-91 to 30-03-91	Central (M.P.)
63.	-do-	Delhi University, Delhi.	24-04-90 to 14-05-90 25-05-90 to 14-06-90 08-06-90 to 28-06-90 03-10-90 to 23-10-90 18-12-90 to 08-01-91	North (Delhi, U.P.)
64.	Political Science	Goa University.	20-08-90 to 08-09-90 12-11-90 to 01-12-90 04-02-91 to 23-02-91	West (Maharashtra. Goa)
65.	-do-	Panjab University, Chandigarh.	07-05-90 to 26-05-90	North (except Delhi, U.P.)
66.	-do-	Hyderabad Univ., Hyderabad.	May-June, 1990 November-December, 1990	South

67.	Political Science	J.N. University, New Delhi.	02-07-90 to 27-07-90 03-12-90 to 28-12-90	North (Delhi, U.P.)
68.	-do-	Jodhpur University, Jodhpur.	04-06-90 to 23-06-90 02-07-90 to 21-07-90	Central
69.	Psychology	Gorakhpur Univ., Gorakhpur	June, 1990 August, 1990 October, 1990 December, 1990 February, 1991	West/ North
70.	-do-	Bihar University, Muzaffarpur.	10-04-90 to 30-04-90 16-07-90 to 05-08-90 16-08-90 to 05-09-90 07-11-90 to 27-11-90 01-02-91 to 21-02-91	Central/ East (Bihar)
71.	-do-	Calicut University, Calicut.	11-06-90 to 30-06-90	South
72.	Geography	Gorakhpur University, Gorakhpur.	15-06-90 to 14-07-90 August, 1990 15-09-90 to 14-10-90 November. 1990 15-12-90 to 14-01-91	East
73.	-do-	M.K. University, Madurai.	07-05-90 to 02-06-90 30-07-90 to 25-08-90 01-10-90 to 27-10-90 26-11-90 to 22-12-90 21-01-91 to 16-02-91	South
74.	-do-	A.M.U. Aligarh.	23-07-90 to 24-08-90 28-08-90 to 25-09-90 12-12-90 to 08-01-91 14-01-91 to 10-02-91 11-03-91 to 06-04-91	West/ Central
75.	-do-	Panjabi University, Patiala.	05-11-90 to 28-11-90 05-03-91 to 28-03-91	North
76.	Journalism	B.H.U., Varanasi.	October, 1990	North/ Central/ East
77.	Hindi	-do-	September, 1990	North/ Central
78.	-do-	Burdwan University, Burdwan.	02-07-90 to 23-07-90 02-11-90 to 23-11-90	East
79.	-do-	Sardar Patel Univ. Vallabh Vidyanagar	07-05-90 to 27-05-90 08-10-90 to 28-10-90 05-02-91 to 25-02-91	West India
80.	Malayalam	Kerala University, Trivandrum	08-08-90 to 28-08-90 02-01-91 to 22-01-91 13-02-91 to 05-03-91	All India
81.	English	Lucknow University, Lucknow.	01-08-90 to 31-08-90 01-03-91 to 30-03-91	North
82.	English	C.I.E.F.L. Hyderabad.	03-09-90 to 29-09-90 04-02-91 to 02-03-91	South (Andhra, T.N.)
83.	-do-	Poona University, Pune.	02-05-90 to 29-05-90 04-06-90 to 30-06-90 04-12-90 to 31-12-90 02-01-91 to 30-01-91	West
84.	-do-	Mysore University, Mysore.	02-07-90 to 21-07-90 03-09-90 to 22-09-90 03-12-90 to 22-12-90	South (Karnataka, Kerala)
85.	-do-	Ranchi University, Ranchi.	07-08-90 to 27-08-90 05-11-90 to 25-11-90 February, 1991	East (Bihar, Orissa)
86.	-do-	Rajasthan Univ., Jaipur.	14-05-90 to 02-06-90 16-07-90 to 04-08-90 17-09-90 to 06-10 90 31-12-90 to 19-01-91 18-02-91 to 09-03-91	Central
87.	Bengali	Burdwan University, Burdwan.	02-06-90 to 29-06-90 25-12-90 to 21-01-91	All India
88.	Marathi	Nagpur University, Nagpur.	01-04-90 to 26-04-90 04-06-90 to 28-06-90 13-08-90 to 06-09-90 05-11-90 to 29-11-90	All India
89.	Panjabi	Guru Nanak Dev University, Amritsar.	15-05-90 to 12-06-90 01-11-90 to 28-11-90	All India
90.	Urdu	Patna University, Patna.	04-06 90 to 22-06-90 19-11-90 to 08-12-90	East/ Central
91.	-do-	Osmania University, Hyderabad.	09-07-90 to 31-07-90 04-03-91 to 28-03-91	South
92.	-do-	A.M.U. Aligarh.	23-07-90 to 24-08-90 12-11-90 to 08-12-90 11-03-91 to 06-04-91	North (U.P., Delhi)/ West
93.	Kannada	Mysore University, Mysore,	June, 1990 September, 1990 December, 1990	All India
94.	Sanskrit, Pali and Prakrit.	Kurukshetra Univ., Kurukshetra.	10-07-90 to 06-08-90 03-01-91 to 23 01-91	North
95.	-do-	Poona University, Pune.	03-04-90 to 30-04-90 02-05-90 to 29-05-90 01-06-90 to 27-06-90 03-12-90 to 31-12-90 01-02-91 to 27-02-91	West/ Central

96.	Education	Kerala University, Trivandrum.	13-07-90 to 02-08-90 11-10-90 to 31-10-90 23-01-91 to 12-02-91 07-03-91 to 27-03-91	South
97.	-do-	Kurukshetra Univ., Kurukshetra.	17-04-90 to 07-05-90 17-08-90 to 06-09-90 23-10-90 to 12-11-90 05-02-91 to 25-02-91 02-03-91 to 22-03-91	North/ (Haryana, U.P.) Central/ East
98	Law	Lucknow University, Lucknow.	04-06-90 to 30-06-90 03-12-90 to 31-12-90	North/ Central/ East
99.	-do-	National Law School, Bangalore.	September, 1990	South/ West
100.	Linguistics	Hyderabad Univ., Hyderabad.	20-08-90 to 08-09-90 22-10-90 to 10-11-90 07-01-91 to 25-01-91 18-02-91 to 02-03-91	All India
101.	French	Pondicherry Univ., Pondicherry	11-07-90 to 07-08-90 25-10-90 to 21-11-90 24-01-91 to 20-02-91	All India
102.	German	C.I.E.F.L. Hyderabad	01-10-90 to 28-10-90 07-01-91 to 01-02-91	All India
103.	Russian	J.N. University, New Delhi.	30-04-90 to 25-05-90 22-10-90 to 16-11-90	All India
104.	Arabic, Persian and Islamic Studies.	J.M.I. New Delhi	23-07-90 to 13-08-90 10-12-90 to 31-12-90 03-10-90 to 21-10-90	All India

Orientation Programme

S.No.	Name of University	Proposed Schedule for 1990-91
1	2	3
1.	Andhra University, Waltair.	25-05-1990 to 21-06-1990 20-08-1990 to 15-09-1990 12-11-1990 to 8-12-1990 01-03-1991 to 28-03-1991
2.	Hyderabad University, Hyderabad.	23-04-1990 to 16-05-1990 28-05-1990 to 20-06-1990 02-07-1990 to 25-07-1990 20-08-1990 to 15-09-1990 08-10-1990 to 03-11-1900 05-11-1990 to 30-11-1990 18-01-1991 to 14-2-1991
3.	Osmania University, Hyderabad.	04-06-1990 to 30-06-1990 03-08-1990 to 25-8-1990 03-10-1990 to 27-10-1990 02-01-1991 to 25-01-1991
4.	Sri Venkateswara University, Tirupati.	June, 1990; September, 1990; December, 1990 and March, 1991.
5.	Patna University, Patna.	04-04-1990 to 01-05-1990 11-06-1990 to 07-07-1990 16-07-1990 to 11-08-1990 20-08-1990 to 15-09-1990 05-11-1990 to 01-12-1990 07-01-1991 to 02-02-1991
6.	Ranchi University, Ranchi	03-05-1990 to 23-05-1990 09-07-1990 to 29-07-1990 03-12-1990 to 23-12-1990
7.	Bihar University, Muzaffarpur	09-04-1990 to 06-05-1990 14-05-1990 to 10-06-1990 09-07-1990 to 05-08-1990 17-08-1990 to 13-09-1990 29-10-1990 to 25-11-1990 26-11-1990 to 23-12-1990 15-01-1991 to 11-02-1991 14-02-1991 to 13-03-1991
8.	Gujarat University, Ahmedabad	21-03-1990 to 10-04-1990 30-04-1990 to 20-05-1990
9.	Kurukshetra University, Kurukshetra.	15-05-1990 to 11-06-1990 15-06-1990 to 12-07-1990 24-11-1990 to 21-12-1990
10.	Calicut University, Calicut.	05-06-1990 to 30-06-1990 05-07-1990 to 30-07-1990 06-08-1990 to 31-08-1990 03-10-1990 to 27-10-1990 05-11-1990 to 30-11-1990 07-01-1991 to 31-01-1991
11.	Kerala University, Trivandrum	15-06-1990 to 12-07-1990 12-09-1990 to 09-10-1990 02-11-1990 to 30-11-1990 04-12-1990 to 31-12-1990
12.	Devi Ahilya University, Indore	22-04-1990 to 20-05-1990 18-06-1990 to 15-07-1990 06-08-1990 to 02-09-1990 17-09-1990 to 14-10-1990 05-11-1990 to 02-12-1990 17-12-1990 to 13-01-1991 28-01-1991 to 24-02-1991 01-03-1991 to 28-03-1991
13.	Dr. H.S. Gour University, Sagar.	11-06-1990 to 07-07-1990 09-07-1990 to 04-08-1990 27-08-1990 to 22-09-1990 22-10-1990 to 17-11-1990 26-11-1990 to 22-12-1990 31-12-1990 to 26-01-1991 28-01-1991 to 23-02-1991 11-03-1991 to 06-04-1991

14.	Rani Durgavati University, Jabalpur.	02-04-1990 to 28-04-1990 02-07-1990 to 28-07-1990 27-08-1990 to 22-09-1990 03-12-1990 to 29-12-1990 04-03-1991 to 30-03-1991
15.	Marathwada University, Aurangabad.	16-04-1990 to 05-05-1990 14-05-1990 to 02-06-1990
16.	Nagpur University, Nagpur.	02-05-1990 to 29-05-1990 09-07-1990 to 06-08-1990 17-09-1990 to 15-10-1990 10-12-1990 to 06-01-1991 15-01-1991 to 12-02-1991 01-03-1991 to 28-03-1991
17	University of Poona, Pune.	29-05-1990 to 25-06-1990 17-07-1990 to 13-08-1990 28-08-1990 to 24-09-1990 23-10-1990 to 19-11-1990 27-11-1990 to 24-12-1990 08-01-1991 to 04-02-1991 19-02-1991 to 18-03-1991
18.	NEHU, Shillong	27-02-1990 to 28-03-1990 07-06-1990 to 04-07-1990 26-02-1991 to 25-03-1991
19.	Punjab University, Chandigarh.	09-04-1990 to 04-05-1990 14-05-1990 to 08-06-1990 18-06-1990 to 13-07-1990 17-09-1990 to 12-10-1990 17-12-1990 to 11-01-1991 04-03-1991 to 29-03-1991
20.	Guru Nanak Dev University, Amritsar.	16-04-1990 to 13-05-1990 04-07-1990 to 13-07-1990 17-09-1990 to 13-10-1990 03-12-1990 to 29-12-1990
21.	Pondicherry University, Pondicherry	06-06-1990 to 03-07-1990 25-07-1990 to 23-08-1990 12-09-1990 to 13-10-1990 07-11-1990 to 04-12-1990 04-01-1991 to 05-02-1991 27-02-1991 to 27-03-1991
22.	Jodhpur University, Jodhpur.	16-04-1990 to 12-05-1990 18-06-1990 to 14-07-1990 28-08-1990 to 24-09-1990 05-11-1990 to 01-12-1990 25-02-1991 to 23-03-1991
23.	Rajasthan University, Jaipur.	18-06-1990 to 14-07-1990 20-08-1990 to 15-09-1990 22-10-1990 to 17-11-1990 03-12-1990 to 29-12-1990 21-01-1991 to 16-02-1991 04-03-1991 to 30-03-1991
24.	Madras University, Madras.	18-04-1990 to 18-05-1990 30-05-1990 to 27-06-1990 29-08-1990 to 26-09-1990 04-10-1990 to 02-11-1990 23-11-1990 to 21-12-1990 23-01-1991 to 21-02-1991 25-02-1991 to 26-03-1991
25.	Madurai Kamaraj University, Madurai.	04-05-1990 to 01-06-1990 03-07-1990 to 01-08-1990 17-08-1990 to 15-09-1990 04-10-1990 to 02-11-1990 21-11-1990 to 19-12-1990 18-01-1991 to 16-02-1991
26.	Bharathiar University, Coimbatore.	18-04-1990 to 15-05-1990 06-06-1990 to 03-07-1990 03-08-1990 to 30-08-1990 04-10-1990 to 31-10-1990 22-11-1990 to 19-12-1990 04-01-1991 to 31-01-1991 13-02-1991 to 12-03-1991
27.	Aligarh Muslim University, Aligarh.	23-04-1990 to 20-05-1990 23-07-1990 to 24-08-1990 03-09-1990 to 04-10-1990 22-10-1990 to 18-11-1990 26-11-1990 to 22-12-1990 14-01-1991 to 10-02-1991 11-03-1991 to 06-04-1991
28.	Banaras Hindu University, Varanasi.	April, 1990. May-June, 1990 and July-August, 1990
29.	Lucknow University, Lucknow.	01-05-1990 to 31-05-1990 02-07-1990 to 31-07-1990 01-09-1990 to 30-09-1990 01-11-1990 to 30-11-1990 01-01-1991 to 31-01-1991 26-03-1991 to 25-04-1991
30.	Gorakhpur University, Gorakhpur.	10-04-1990 to 07-05-1990 29-05-1990 to 25-06-1990 11-07-1990 to 07-08-1990 25-08-1990 to 21-09-1990 23-10-1990 to 19-11-1990 01-12-1990 to 28-12-1990 11-01-1991 to 07-02-1991 04-03-1991 to 31-03-1991
31.	Bharathidasan University, Tiruchirapalli.	17-04-1990 to 14-05-1990 19-10-1990 to 15-11-1990 04-12-1990 to 31-12-1990 06-02-1991 to 05-03-1991

32.	Burdwan University, Burdwan	September-October, 1990 December-January, 1991
33.	Delhi University, Delhi.	19-04-1990 to 16-05-1990 21-05-1990 to 17-06-1990 22-06-1990 to 19-07-1990 24-09-1990 to 22-10-1990 17-12-1990 to 13-01-1991
34.	Jamia Millia Islamia New Delhi.	03-05-1990 to 30-05-1990 04-06-1990 to 30-06-1990 09-07-1990 to 04-08-1990 21-08-1990 to 17-09-1990 25-09-1990 to 22-10-1990 30-10-1990 to 26-11-1990 04-12-1990 to 31-12-1990 09-01-1991 to 03-02-1991 13-02-1991 to 12-03-1991
35.	Goa University, Goa.	25-06-1990 to 21-07-1990 13-09-1990 to 10-10-1990 06-12-1990 to 02-01-1991 04-03-1991 to 30-03-1991
36.	H.P. University, Simla.	05-04-1990 to 02-05-1990 25-05-1990 to 20-06-1990 25-06-1990 to 21-07-1990 03-09-1990 to 29-09-1990 05-11-1990 to 01-12-1990 04-03-1991 to 30-03-1991
37.	Utkal University, Bhubaneswar.	10-04-1990 to 05-05-1990 29-05-1990 to 25-06-1990 12-07-1990 to 08-08-1990 25-08-1990 to 21-09-1990 20-10-1990 to 16-11-1990 04-12-1990 to 31-12-1990 02-01-1991 to 29-01-1991 01-02-1991 to 28-02-1991
38.	Mysore University, Mysore.	August, 1990; October, 1990 and March, 1991

For further details, please contact the Director, Academic Staff College or the Head of the Department in the concerned discipline at the respective University/Institution.

davp 90/43

National Council of Educational Research & Training

Diploma Course in Educational and Vocational Guidance 1990-91

NCERT conducts a Diploma Course in Educational and Vocational Guidance of nine months duration. The Course will commence from August, 1990.

An All India Selection Test will be held on Tuesday, the 12th June, 1990 at Allahabad, Bangalore, Bhubaneswar and New Delhi centres. Exact address of the venue will be communicated through the call letter.

ADMISSION REQUIREMENT is Master's degree in Psychology or Master's degree in Education with at least 55% marks (50% marks for Scheduled Caste/Tribe candidates). Medium of Instruction is English. However the candidates will have option to write their answers in Hindi. Age should preferably be below 40 years. There are Thirty Five (35) seats. Twenty Five trainees will be awarded stipends of Rs. 325/- per month based on the merit at the All India Selection Test. Five seats with stipend are reserved for Scheduled Caste candidates and Two with stipend, for Scheduled Tribe candidates. Very limited hostel facilities are available which will be allotted only in very exceptional cases.

Students who will appear in May/June, 1990 examination of a University can also apply.

Application on plain paper in the following format, should reach at the address given below latest by **14th May, 1990.**

PROFORMA OF APPLICATION

1. Name (in Block Letters) __________
2. Address for Correspondence __________
3. Date of Birth __________
4. Whether belongs to SC/ST ? __________
5. Qualifications __________

S. No.	Board/ University	Name of Examination	Percentage of marks	Years of passing	Papers offered

6. Experience, if any __________
7. Proposed Centre for the Selection Test __________

Attested copies of mark-sheets and SC/ST certificate wherever applicable, should be sent along with the application. Those who are in service should send their application through Proper Channel. Applications incomplete in any respect will not be considered.

Head
Department of Educational Psychology, Counselling and Guidance,
NCERT,
Sri Aurobindo Marg,
New Delhi-110016.

davp 90/50

CLASSIFIED ADVERTISEMENTS

KUMAUN UNIVERSITY
NAINITAL

Advt. No. Affl/50 Dated : 12 April, 1990.

Applications for the following posts are invited by 19-5-1990 on prescribed form obtainable from the Office of the Registrar, Kumaun University, Nainital-263 001 (U.P.) by sending a self-addressed 9" x 6" envelope and crossed postal order/Bank Draft for Rs. 15/- payable to Finance Officer, Kumaun University, Nainital. Money Orders are not acceptable. Candidates who have already applied in response of Advt. No. 350 Dt. 13-12-85, 1736 Dt. 26-2-86, 302 Dt. 30-5-87 & 1839 Dt. 25-1-89 for the posts of Principals, Advt. No 1477 Dt. 21-1-85, 1199 Dt. 25-11-85, 302 Dt. 30-5-87, 1953 Dt. 29-9-87, 1156 Dt. 29-9-88 for the post of Reader Law, Advt. No. 770 Dt. 9-8-84, 1477 Dt. 21-1-85, 1199 Dt. 25-11-85, 1736 Dt. 26-2-86, 302 Dt. 30-5-87, 562 Dt. 22-6-88 for the posts Reader English, Advt. No. 1156 Dt. 29-9-88 for the post Professor Geology & Professor History, Advt. No. 1839 Dt. 25-1-89, 121 Dt. 27-4-89 for Professor English, Advt. No. 1839 Dt. 25-1-89 for the post Reader Botany need not apply again. However they may send their latest additions in qualification, change of address etc. if any.

Sl. No.	Name of Post	No. of Post	Scale of Pay	Specialization if any
1.	Professor Geology	1R	4500-7300	—
2.	Professor History	1 TLR	4500-7300	—
3.	Professor English	1 TLR	4500-7300	—
4.	Professor Hindi	1 TLR	4500-7300	Kumauni Language
5.	Professor Pol. Science	1 Lv	4500-7300	—
6.	Principal	2 TLR	4500-7300	—
7.	Reader Law	1 TLR	3700-5700	—
8.	Reader English	2 (1R+ 1 TLR)	3700-5700	—
9.	Reader Botany	1 TLR	3700-5700	—

Note : TLR imply-temporary likely to be regular, R, imply-Regular, Lv-imply leave vacancy.

Qualifications

1. For the Posts of Principals

(a) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first or high second class) that is to say with an aggregate of more than 54 per cent marks) Master's degree or an equivalent degree of a foreign university in one of the subject taught in the college, and

(b) a doctorate degree in one of subjects taught in the college, with 7 years experience of teaching post-graduate classes or 5 years experience of Principalship of a degree college.

Provided that if a candidate possesses 10 years experience of teaching post graduate classes or 20 years or more experience of teaching degree classes or seven years experience of Principalship of a degree college or if he is or has been confirmed Principal of 5 years or more standing of any post graduate college, the Selection Committee may relax the requirement of doctorate degree.

Provided further that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard it may relax any of the qualifications prescribed in sub-clause (a).

2. For the Post of Professors

Either—Eminent scholarship with published work of high quality any active engagement in research and ten years experience of teaching or research and experience of guiding research at doctorate level;

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

3. For the Post of Readers

(i) Good academic record with a doctorate degree or equivalent published work and active engagement in research of innovation in teaching methods or production of teaching materials; and

(ii) Five years experience of teaching or research including at least three years as Lecturer or in equivalent position.

Further details regarding qualifications, service and permissible relaxations in qualifications will be provided with application form. Preference will be given to SC/ST and disabled candidates if otherwise considered suitable by the Selection Committee. Application form will not be sent by post after 14-5-90. Application received after due date and on plain paper are not acceptable.

S.C. Joshi
REGISTRAR

SHRAMIK VIDYAPEETH
RANGAREDDY DIST. ANDHRA PRADESH

(Under the auspices of the University of Hyderabad)
(Sponsored by the Government of India)

Advt. No. Rectt/4/90/ Dated : 16 4.1990

Applications are invited on plain paper from candidates possessing the following qualifications and experience for the post of Director, Shramik Vidyapeeth in the pay scale of Rs. 3000-100-3500-125-5000 (Plus allowances as per Central Government rules).

Essential qualifications :

(i) Master's Degree of a recognised University or equivalent,

(ii) 7 years experience in planning, administration and supervision of educational programmes for workers or teaching of workers.

Preference will be given to those having experience in rural/urban development work.

(Qualifications are relaxable in case of candidates otherwise well qualified)

Desirable

(i) Experience of training in Adult Education and in planning and conducting educational programmes for adults in urban areas.
(ii) Experience of production/publication of materials
(iii) Knowledge of Hindi.

Age : Preferably not more than 40 years.

Candidate intending to apply for the above post may furnish the details as to his/her name, date of birth, educational qualifications (from S.S.C. onwards with class and percentage of marks), experience and the nature of duties performed, mailing address and any other information which the candidate may like to furnish in this connection.

Last date of receipt of applications in the Office of the Registrar, University of Hyderabad, Gachibowli, Hyderabad-500 134 is 15th May, 1990.

P. Murali Krishna
REGISTRAR

INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES

(Deemed University)

GOVANDI STATION ROAD,
DEONAR, BOMBAY-400 088

Applications are invited for the following posts :

1. One Administrative Officer—Qualifications : A Bachelors degree. Minimum of 7 years experience with at least 4 years in a senior administrative position. Preference will be given to those who have experience of working in an educational institution. Scale of Pay : Rs. 3000-100-3500-125-4500. Age : Not more than 50 years.

2. One Lecturer—(reserved for Scheduled Tribes) with specialization in the field of Public Health and Mortality Studies. Scale of Pay : Rs. 2200-75-2800-100-4000. Qualifications as per UGC requirements. Age : Not more than 40 years.

3. One Console Operator—Essential: (i) A pass in S.S.C. examination or equivalent, (ii) One year's experience of Data Processing Work. Scale of Pay : Rs. 1640-60-2600-EB-75-2900. Age : Not more than 30 years.

4. One Technical Assistant—Qualifications : M.A./M.Sc. degree in Statistics or Mathematics, preferably with experience of working in research institutions, or M.A./M.Sc. degree in other social sciences with some training and/or experience in the field of Statistics/Demography. Scale of Pay : Rs. 1400-40-1800-EB-50-2300. Age : Not more than 30 years.

The posts carry dearness and other allowances as admissible to Central Government employees of equivalent grade stationed in Bombay. **The applicants working in Government or semi-Government organization should send their applications through proper channel.**

Application forms along with the details of qualifications, experience, etc. required for the post may be obtained from the Administrative Officer either in person or with a self-addressed envelope of size 25 x 12 cm. affixing Rs. 3.00 stamp. **The last date for request of applications is 10th May, 1990 and completed applications should reach the Institute latest by 25th May, 1990.**

K. Srinivasan
DIRECTOR

PUNJABI UNIVERSITY

PATIALA

Advt. No. 7/PRO/Rect./90

Applications on the prescribed form are invited for the following posts so as to reach the Deputy Registrar (Establishment) by May 21, 1990.

1. Professors

Two in Guru Gobind Singh Department of Religious Studies (which includes one for Bhai Jodh Singh Chair of Sikhism), One each in the Departments of Computer Science & Applications, Sri Guru Granth Sahib Studies, Geography and History and two at Guru Kashi Regional Centre, Bhatinda, (One for English and one for Economics).

SPECIALIZATIONS/DESIRABLE QUALIFICATIONS

Guru Gobind Singh Department of Religious Studies

Religious Studies/Philosophy/Sanskrit/Pali/Christian Theology/Arabic/Islamic Theology. Five years' teaching experience at M.Phil level in the relevant religious tradition. Candidates must have good knowledge of canonical language of Hinduism/Buddhism/Christianity/Islam, in addition to working knowledge of Punjabi.

Bhai Jodh Singh Chair of Sikhism

Religious Studias/Philosophy. Five years' teaching experience at M.Phil level in Religious Studies. Familiarity with the history and doctrines of other major world religions with working knowledge of Sanskrit and/or Persian and Punjabi.

Candidates selected for the above posts shall have to take up independent research projects alongwith teaching assignment and preparation of text-books, etc.

Computer Science & Applications

Theoretical Computer Science/Computer Graphics/Artificial Intelligence/DBMS/Software Engineering/Computer System Modelling and Performance Evaluation / Distributed Computing/Parallel Computing/Fifth Generation Computing Systems/Operating Systems.

Sri Guru Granth Sahib Studies

ਗੁਰਬਾਣੀ ਦਾ ਉੱਘਾ ਵਿਦਵਾਨ ਜਿਸਨੇ ਉਚ ਕੋਟੀ ਦੀ ਖੋਜ ਕਰਕੇ ਗੁਰਬਾਣੀ ਅਤੇ ਗੁਰਮਤਿ ਸਿਧਾਂਤਾਂ ਸਬੰਧੀ ਪੁਸਤਕਾਂ ਲਿਖੀਆਂ ਹੋਣ ਅਤੇ ਖੋਜ ਦੇ ਕਾਰਜ ਵਿਚ ਤੱਲੀਨ ਹੋਵੇ ਅਤੇ ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਸਬੰਧੀ ਦਸ ਸਾਲ ਤੋਂ ਖੋਜ ਦਾ ਕੰਮ ਕਰ ਰਿਹਾ ਹੋਵੇ।

History : Modern Indian History/History of Punjab.

Guru Kashi Regional Centre, Bhatinda

English : Commonwealth/Modern British/American Literature

Economics : Macro Economics/Monetary Economics

2. Readers

Five in Law, Two in Anthropological Linguistics, One each in the Departments of Journalism & Mass Communication, Punjabi Literary Studies, Zoo-

logy, Social Work, Computer Science and Applications and four for the Department of Correspondence Courses (one each in the subjects of Political Science, History, English & Punjabi).

SPECIALIZATIONS/DESIRABLE QUALIFICATIONS

Law : (i) Constitutional/International/Family/Criminal Law (ii) evidence of published work regarding law in Punjabi (iii) five years' experience of teaching LL.M. Classes.

Anthropological Linguistics : Theoretical Linguistics/Stylistics/Sociolinguistics.

Journalism & Mass Communication : Mass Communication

Punjabi Literary Studies :

1. ਪੰਜਾਬੀ ਕੋਸ਼ਕਾਰੀ ਦੇ ਖੇਤਰ ਵਿਚ ਤਜਰਬਾ
2. ਖਰੜਿਆਂ ਤੇ ਪੁਸਤਕਾਂ ਦੇ ਸੰਪਾਦਨ/ਸੋਧ-ਸੁਧਾਈ ਦਾ ਤਜਰਬਾ
3. ਸੰਸਕ੍ਰਿਤ/ਫ਼ਾਰਸੀ/ਹਿੰਦੀ ਦੀ ਜਾਣਕਾਰੀ

Computer Science and Application : Computer Communications/Analog and Digital Circuits and Designs/Algorithm Analysis/Compiler Design/System Simulation/Artificial Intelligence.

Social Work : (i) Sociology/Social Anthropology will be treated as allied subjects.

(ii) Candidates who have post-graduate degree in allied subjects should have experience of teaching social work and they should have done atleast two courses conducted by the U.G.C.

Political Science : Political Theory/International Politics/National Politics.

History : History of Punjab/History and Culture of Punjab/Modern Indian History

English : Modern American Fiction/Modern Drama/Literary Criticism/Modern American Poetry.

Punjabi : Folkore and Culture

3. LECTURERS

Five for the Department of Correspondence Courses (Two each in Economics and English and one in Hindi), Two each in the Departments of Computer Science & Applications and Anthropological Linguistics and one each in the Departments of Sri Guru Granth Sahib Studies, Sociology, and Social Anthropology, Persian (for Nawab Sher Mohd. Khan Institute in Urdu at Malerkotla), Education & Community Services (leave vacancy up to 2.7.90), Human Biology and Economics (Guru Kashi Regional Centre, Bhatinda).

Specialisations/Desirable Qualifications

Economics :

Ist Post	Political Economy of Development / Agricultural Economics
2nd Post	Money and Banking/Agriculture Economics/Political Economy of Development/Current Problems of the Indian Economy/Public Finance/Quantitative Methods in Economics

English :

Ist Post :	Romantic Poetry/20th Century/American Fiction
2nd Post :	Black Literature/European Literature
Hindi :	Medieval Poetry/Modern Fiction

Computer Science and Applications: Persons with B.E./B. Tech./M.C.A. degree in Computer Science shall also be considered.

Anthropological Linguistics : Psycholinguistics/Historical Linguistics/Applied Linguistics.

Sri Guru Granth Studies :

1. ਪੰਜਾਬੀ ਸਬੰਧਿਤ ਵਿਸ਼ਾ ਸਮਝਿਆ ਜਾਵੇਗਾ।
2. ਕੋਸ਼ਕਾਰੀ ਦਾ ਤਜਰਬਾ, ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਦੀ [illegible] ਤੇ ਵਿਚਾਰਧਾਰਾ ਨਾਲ ਜਾਣਕਾਰੀ, ਮਧਕਾਲੀਨ ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਧਿਐਨ ਦੀ ਵਿਸ਼ੇਸ਼ਗਤਾ
3. ਫ਼ਾਰਸੀ/ਸੰਸਕ੍ਰਿਤ ਦਾ ਗਿਆਨ।

Sociology & Social Anthropology : Evidence of published work in Punjabi.

Human Biology : Any aspect of Cell Biology

Guru Kashi Institute of Regional Centre, Bhatinda

Economics : Political Economy

Pre-Examination Training Centre for Competitive Exams. For Scheduled Castes/Scheduled Tribes

4. Reader Co-Ordinator—One

Desirable Qualifications

(i) Five years' experience of educational administration, teaching and co-ordinating activities of Coaching Schemes/Training Institutions.

(ii) Flair for General Knowledge including national and international developments.

5. Part-time Lecturers (one each in general English and Personality Development)

(@ Rs. 1200/- per month fixed during the tenure of the course).

Specializations/Desirable Qualifications

General English: English will be relevant subject. Flair for General knowledge including national and international developments.

Personality Development : Psychology will be relevant subject. Practical experience of guidance and counselling and flair for General Knowledge.

For the part-time posts of Lecturers, preference will be given to members of SC/ST provided they fulfil the required educational qualifications.

NOTE :

1. These posts carry UGC pay-scales. Only specializations/desirable qualifications have been given in this advertisement. Detailed qualifications as prescribed by the UGC will be supplied alongwith the application form.
2. Candidates must possess working knowledge of Punjabi.
3. Incomplete applications will not be entertained.
4. Candidates who had applied for the posts of Reader in Social Work, Lecturers in Hindi (CC), English (CC) and Reader Co-ordinator in response to earlier advertisement need not apply again.
5. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.
6. For the posts of Reader and Lecturer for the Department of Correspondence Courses, candidates should have working experience in Correspondence Courses.

APPLICATION FORMS can be obtained from the Head, University Publication Bureau, on payment of Rs. 15/- at the Counter or by sending an IPO for Rs. 15/- in favour of the Registrar, alongwith a self-addressed envelope (25 x 10 cms.) afixed with postage stamps worth Rs. 7/- and indicating on it the name of the post applied for.

REGISTRAR

ALI YAVAR JUNG NATIONAL INSTITUTE FOR THE HEARING HANDICAPPED

BOMBAY

(An autonomous Registered Society under the Administrative Control of Ministry of Welfare, Government of India).

Invites applications for the following posts :

Sl. No.	Name of the Post	No. of Posts
1.	Dy. Director (Admn)	1
2.	Accounts Officer	1

Minimum Qualifications

For Post at Sl. No. 1

(i) Bright academic record with Degree in Arts/Science/Commerce/Management, etc.

(ii) Atleast 10 years experience in personnel work, recruitment, purchase of stores, etc. out of which 5 years should be in a senior administrative position in a Govt., Semi-Govt., Corporate Sector with knowledge of Govt. practices and procedure.

Note : Qualifications are relaxable at the discretion of the Selection Committee in the case of candidates otherwise well qualified.

For Post at Sl. No. 2

(a) SAS Qualification

(b) 5 years experience as Jr. Accounts Officer, or Section Officer in Accounts Department.

		Pay Scale	Total initial emoluments
1.	For Post at Sr. No. 1	Rs. 3700-5000/-	Rs. 5,730/-
2.	For Post at Sr. No. 2	Rs. 2375-3500/-	Rs. 3,828/-

Age Limit

For post at Sr. No. 1 : Not exceeding 45 years.

For post at Sr. No. 2 : Not exceeding 40 years.

Age is relaxable by five years in case of Scheduled Caste/Scheduled Tribe candidates and Govt. employees. Candidates employed in Government/Semi-Government Services, should forward their applications through proper channel.

Applications giving full details such as Name in full, postal address, Date of Birth, Educational Qualifications whether SC/ST, with zerox copies of certificates, details of experience should be forwarded to the Director, Ali Yavar Jung National Institute for the Hearing Handicapped, Opp. Telephone Exchange, K.C. Marg, Bandra Reclamation, Bandra (West), Bombay-400 050 within 10 days from the date of appearance of the Notice in newspaper. Incomplete applications will not be considered.

Those who have already applied for the said posts with reference to the advertisement published in September, 1989, need not apply again. Their earlier application will be considered.

REGIONAL ENGINEERING COLLEGE

SILCHAR (ASSAM) 788 010

Dated : 18th April, 1990.

ADDENDUM

Reference Advertisement No. 1/90 (Estt.) of this Institution. The post of Lecturer in Civil Engineering and Applied Mechanics Engineering are also added under item No. 3 for filling up the future vacancies likely to be occurred during the year 1990. The scale of pay for the above posts are same as indicated against Lecturer and requisite qualification are also same as indicated against Lecturer in Engineering subjects in the original advertisement.

The last date of receipt of the applications for the above posts are extended upto 31st May, 1990.

The other conditions of the advertisement (Advt. No. 1/90. Estt.) will remain same.

PRINCIPAL & SECRETARY

MALAVIYA REGIONAL ENGINEERING COLLEGE

JAIPUR

Advertisement No. 3/90

Applications duly typed on plain paper are invited for the posts of Lecturers in Civil, Electrical & Electronics Engineering in the pay scale of Rs. 2200-4000 by 18-5-90 from the candidates possessing "First Class Bachelor's degree in appropriate branch of Engg./Technology" alongwith I.P.O. Rs. 15/- (Rs. 7/- for S.T. & S.C. candidates) (giving name, address, date of birth, qualifications with full particulars about year of passing the various examinations the name of Board or University percentage of marks obtained other particulars and also details of experience). The vacancies to be filled in are permanent as well as plan posts which are temporary but likely to continue. The applicants who have already applied in response to our advertisement No. 2 Estt/89, (with last date as 26-7-89) need not apply again. However, additional qualifications, experience, if any, acquired by them could be intimated giving reference of their previous applications. The benefit of C.P.F., Gratuity, D.A., H.R.A. & C.C.A. is admissible as per rules. The persons already working at this College on temporary basis need also to apply for permanent posts, if such vacancies exist at present or likely to develop later on, if they have not already applied.

REGISTRAR

TATA INSTITUTE OF SOCIAL SCIENCES
(Institution Deemed to be University)
Post Box No. 8313, Deonar, Bombay-400 088

Admission Announcement for 1990-91

POST M.A. CERTIFICATE PROGRAMME IN RESEARCH METHODOLOGY
M.PHIL./PH.D. PROGRAMME IN SOCIAL SCIENCES AND SOCIAL WORK

1. **Certificate Programme in Research Methodology**
   (one semester full-time in the second semester) after a Master's degree in the Social Sciences/Social Work.

2. **M.Phil. in Social Work/Social Sciences**
   (Full-time and Part-time)

3. **Ph.D. in Social Work/Social Sciences**
   (Full-time and Part-time)

ELIGIBILITY:

1. **Certificate Programme in Research Methodology:**
   Master's degree in the relevant faculty with at least 50% of the marks/grade point average of 3.0 under the University Grants Commission 7 point grade system. SC/ST applicants should have obtained 45% of the marks/or C grade, or grade point average of 2.50 under the UGC 7 point Grade system. Reservation for SC/ST 15% for SC and 7.5% for ST.

2 & 3. **M.Phil./Ph.D. Programme:**
Master's degree of the relevant faculty with 55% of the marks/grade point average of 3.5 under the University Grants Commission 7 point grade system.

RECEIPT OF APPLICATIONS AND COMMENCEMENT OF PROGRAMMES

The applications for the Certificate Programme in Research Methodology are received till October 12, 1990. The programme commences on November 14, 1990. The application form and prospectus will be available from **July 1990** on request accompanied by Demand Draft for Rs. 25/-.

The applications for the M.Phil./Ph.D. Programme are accepted and the selection made throughout the year. The selected candidates will commence their programme soon after their selection.

Applications and prospectus are available on request accompanied by Demand Draft for Rs. 25/-.

SCHOLARSHIPS:

Five (UGC) Junior Research Fellowships are available for the Ph.D. programme. Only those who have passed the National Level Test conducted by the University Grants Commission will be considered for the award of these fellowships.

April 16, 1990

(N. Krishnamoorthy)
Registrar

DEPARTMENT OF SCIENCE & TECHNOLOGY

FINANCIAL TRAVEL ASSISTANCE TO SCIENTISTS TO ATTEND INTERNATIONAL CONFERENCES/SEMINARS/WORKSHOPS/TRAINING PROGRAMMES

The Department of Science & Technology provides travel assistance to scientists for participating in International conferences, seminars, symposia, workshops-training programmes etc. The objective is to encourage interaction of Indian Scientists with Scientists from other countries in order to help them to keep abreast with the latest developments as well as in exchange of ideas.

So far, upto 50% of excursion fare was being provided to Scientists to attend non-ICSU conferences. (Young Scientists upto the age of 35 years are also eligible to apply for ICSU conferences).

In view of the difficulty faced by Scientists to obtain matching grant from other national sources, it has been decided that DST would consider providing upto 100% air fare. DST would also consider reimbursing economy class fare for conferences of duration shorter than 14 days (applicable in case of excursion fare).

The revised terms and conditions for the scheme are as follows:

— Conference should be of international character.

— It should be a non-ICSU conference (Young Scientists upto the age of 35 years are also eligible to apply for ICSU conferences).

— Only Young Scientists upto the age of 35 years are eligible for consideration for training programmes.

— Applications should have been forwarded through proper channel. The host institution hold **strongly** recommend the case and indicate its inability to financially support the travel.

— Applicant should have a paper accepted for presentation at the conference or should be an invited speaker or chairman of a scientific session.

— Applicant should not have availed grant from DST in the last 3 years.

— Applicant should not be a Central Government employee. (Scientists working in CSIR, ICMR, ICAR and other national laboratories should normally approach their own funding agencies for travel grant).

For formats and other details, scientists may contact Science & Technology Promotion Division, Department of Science & Technology, Technology Bhavan, New Mehrauli Road, New Delhi-110 016.

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